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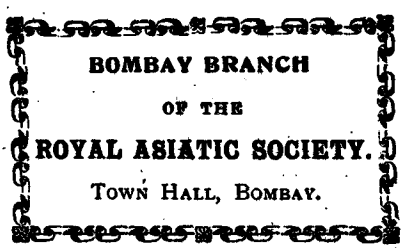

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A

HISTORY

OF

ANCIENT GEOGRAPHY

AMONG THE GREEKS AND ROMANS
FROM THE EARLIEST AGES TILL THE FALL OF
THE ROMAN EMPIRE.

By E. H. BUNBURY, F.R.G.S.

63362

WITH TWENTY ILLUSTRATIVE MAPS

IN TWO VOLUMES.—VOL. II.

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HISTORY

OF

ANCIENT GEOGRAPHY.

CHAPTER XVII.

GEOGRAPHERS AFTER ERATOSTHENES.

SECTION 1.—*Hipparchus.*

§ 1. GREAT as were undoubtedly the merits of Eratosthenes as a geographer, when we compare the state of the science in his hands with what it had previously been, they were far from being generally acknowledged in his own day. The philosophers and writers of the Alexandrian school appear indeed to have been pre-eminently distinguished by that spirit of jealousy and disposition to find fault with their contemporaries and predecessors which has too often characterised men of letters and learning in all ages. Accordingly we find that Eratosthenes was assailed with severe criticisms, at the same time that even his adversaries were obliged to adopt many of his conclusions. POLEMON especially, a Stoic philosopher of considerable reputation, who flourished about the beginning of the second century B.C.,[1] and who devoted much attention to the detailed examination of Greece itself, and its most celebrated localities, attacked Eratosthenes in the most vehement manner, and even ventured to assert that he had never visited Athens,—a paradox justly treated with contempt by Strabo.[2]

[1] According to Suidas (s. v.), he was a contemporary of Aristophanes of Byzantium, and flourished in the reign of Ptolemy Epiphanes, B.C. 205–181. He was therefore about a generation younger than Eratosthenes.

[2] Strabo, i. p. 15.

Of his other criticisms we have no account, but as Polemon appears to have occupied himself with researches of an antiquarian and topographical character,[3] rather than with questions of general geography, it is probable that they would have had little bearing on our immediate subject.

§ 2. A far more formidable adversary presented himself in the great astronomer HIPPARCHUS, who though he did not write any geographical work himself, devoted a whole treatise to the criticism of that of Eratosthenes, and the refutation of some of his conclusions.[4] Unfortunately this treatise is lost to us, in common with the one against which it was directed, and we know the views of Hipparchus, as well as those of Eratosthenes, only by the very imperfect report of them in Strabo, who was himself little versed in astronomy, and hence particularly ill qualified to judge in such a controversy. The general character of his criticisms is however not difficult to discern. Hipparchus regarded geography from an astronomer's point of view, and was strongly impressed with the necessity of basing all geogra-

[3] Polemon appears to have travelled about Greece very much in the same spirit that Pausanias did, nearly four centuries later; but he did not compose any general work on the subject, and contented himself with a number of small treatises on special subjects, such as one on the offerings in the Acropolis of Athens, another on those of the treasuries at Delphi, &c. Several of these are cited by Athenæus and other authors. His treatise against Eratosthenes is cited by more than one grammarian, and appears to have borne the special title *περὶ τῆς Ἀθηνήσιν Ἐρατοσθένους ἐπιδημίας* (Schol. ad Aristoph. Av. s. 11). From the character of his researches Polemon derived the title of *ὁ περιηγήτης* (applied in a very different sense from that in which it is commonly given to Dionysius), and from his diligence in collecting inscriptions from sepulchral and other monuments he was nicknamed *ὁ στηλοκόπας* (Athenæus, vi. p. 234, d). He appears, indeed, to have been the first instance of what we should call in modern days an antiquarian traveller. Concerning his works, see Clinton, *F. H.* vol. iii. p. 524. The extant fragments are published by C. Müller, in his *Fragmenta Historicorum Græcorum*, vol. iii. pp. 108–148.

[4] His work is referred to by Strabo as *τὰ πρὸς τὸν Ἐρατοσθένη* (i. p. 7), but whether this was its precise title does not appear. He however tells us distinctly that it did not profess to be a treatise on geography, but merely an examination of that of Eratosthenes (*Ἱππάρχῳ μὲν οὖν μὴ γεωγραφοῦντι ἀλλ' ἐξετάζοντι τὰ λεχθέντα ἐν τῇ γεωγραφίᾳ τῇ Ἐρατοσθενοῦς*, ii. 1, § 41, p. 93). Hipparchus flourished from about 162 to 125 B.C. (See Clinton, *F. H.* vol. iii. p. 532.) His birth is therefore placed conjecturally at about 190 B.C. He was a native of Nicæa in Bithynia.

phical science upon astronomical observations:[5] a truth which Eratosthenes indeed had been the first to point out, though, as we have seen, he failed in carrying it into effect from the want of such observations. Hipparchus was very little better provided in this respect: hence his means of really correcting the conclusions of his predecessor were very small, while he appears to have been led, either by a love of controversy or from attaching undue weight to authorities of little value, to dispute many of the views of Eratosthenes which were in reality well founded.

§ 3. Hipparchus indeed appears to have clearly conceived the idea, which was afterwards adopted by Ptolemy, of a map of the earth's surface, or rather of the habitable portion of the earth, according to the views then generally entertained, in which every important point should be distinctly laid down according to its latitude and longitude, determined by astronomical observations.[6] But even in the time of Ptolemy, as we shall hereafter see, the construction of such a map, however theoretically desirable, was in practice wholly impossible, and the great geographer was obliged to content himself with positions calculated from itineraries and other such materials as he could command.[7] Still more was this the case in the time of Hipparchus, and his attempt to rectify the map of Eratosthenes, though more correct in a few points, was disfigured on the other hand by still graver errors.

§ 4. On most of the fundamental points indeed he was contented to adopt the conclusions of his predecessor. Thus he accepted the calculation of Eratosthenes for the measurement of the earth's circumference,[8] and consequently regarded every

[5] Strabo, i. p. 7.
[6] Strabo, *l. c.*
[7] Ptolem. *Geogr.* i. c. 2.
[8] This is distinctly stated by Strabo (ii. p. 113), and repeated again in another passage (ii. p. 132), where it is moreover confirmed by the addition that every 360th part will therefore contain 700 stadia. Pliny on the contrary tells us (*H. N.* ii. c. 108, § 247) that Hipparchus added *somewhat less than* 25,000 stadia (stadiorum paullo minus XXV millia) to the measurement of Eratosthenes: a singularly vague statement, which we have no means of explaining, but there seems no doubt that it is founded on some misconception. Strabo's testimony is too explicit to be set aside, and he undoubtedly wrote with the work of Hipparchus before him.

one of the 360 parts, or degrees, into which he divided this great circle, as comprising 700 stadia.[9] He adopted moreover his notion of a principal parallel of latitude extending from the Strait of the Columns to the Gulf of Issus, and passing through the island of Rhodes. But instead of placing the Sicilian Strait on the same parallel, he justly described the line in question as passing somewhat to the south of Syracuse:[1] an important rectification, which however was unfortunately not received by succeeding geographers. In like manner he took the meridian passing through Alexandria as a kind of principal meridian, from which longitudes were calculated towards the east and west. This line he supposed, in common with Eratosthenes, to pass through Meroë, Alexandria, Rhodes, Alexandria Troas, and Byzantium, as well as the mouth of the Borysthenes. It was doubtless from its passing through so many known points that it was taken by Hipparchus as the basis of his calculation for the division of the known or habitable world into *climata* or zones of latitude.[2]

§ 5. This division was undoubtedly the most important contribution of Hipparchus to scientific geography. Unfortunately it is known to us only through the abstract given by Strabo, who himself tells us that he was contented with a rough abridge-

[9] Hipparchus was apparently the first to divide the circle into 360°. Eratosthenes, as we have seen, did not carry the division further than into sixty parts.

[1] Strabo, ii. p. 134. The words τὰ Συρακουσίων νοτιώτερα τετρακοσίοις σταδίοις are indeed somewhat vague, but they probably mean to refer to the city, rather than the territory. Both Groskurd and the Latin translator render them as if the reading were Συρακούσων.

[2] Hipparchus appears to have been the first who applied the term κλίματα in this sense, which was subsequently adopted by Ptolemy and later geographers. Eratosthenes had, as we have seen, anticipated him in drawing parallels of latitude through a certain number of points upon his chief meridian, and determining the regions through which they would pass. But these lines were drawn at irregular intervals. Hipparchus introduced the important modification of fixing these intervals with reference to astronomical phenomena, especially to the length of the solstitial day. The manner in which his statements are reported by Strabo would at first seem to leave it doubtful whether he applied the term of *climata* to the circles themselves, or to the spaces bounded by them; but as the latter use of the word was that generally adopted in subsequent times, it is probable that it originated with Hipparchus. Strabo however certainly describes the parallels or circles that formed the limits of each *clima*, not the spaces comprised between them.

ment, as sufficient for the purposes of the geographer.[3] It appears indeed that Hipparchus had calculated the celestial appearances and the changes they underwent for every degree of latitude,[4] proceeding north along the meridian of Alexandria from the equator to the pole. This was of course theoretically possible for an astronomer, even in his day, but he certainly possessed no materials for connecting these results with geography, even in regard to the portions of the earth then known, and it is not probable that he attempted to do so. But he regarded the whole habitable world as divided by eleven parallels of latitude (that is, lines parallel with the equator) for each of which he indicated the length of the longest day—the simplest and most obvious mode of determining the latitude, though of course giving but a rough approximation—together with certain other celestial appearances such as were easily observed.[5] He added at the same time the names of the regions and places, which, according to his calculation, lay under these parallels, and the distances from the one to the other. We must here briefly enumerate them as recorded to us by Strabo,[6] though there is unfortunately great reason to suppose that they are very imperfectly reported by that geographer.

§ 6. The first parallel passed through the Cinnamon Region, and this was regarded by Hipparchus, as it had been by Eratosthenes, as the southern limit of the habitable world. It was placed by him 8800 stadia from the equator,[7] and was

[3] Strabo, ii. 5, p. 132.

[4] It may be as well to mention, in order to avoid misconception, that though I here and elsewhere use the terms "latitude" and "longitude" in the sense familiar to all modern readers, they were not employed in this *technical* sense either by Hipparchus, or by any subsequent geographer until the time of Ptolemy. At least Ptolemy is the first *extant* writer in whom they are found. They were certainly unknown to Strabo.

[5] Thus, for example, the inhabitants of the Region of Cinnamon were the first for whom the Little Bear was constantly within the arctic circle; that is, never set; at Syene the greater part of the Great Bear was in the same condition; to the north of Byzantium Cassiopeia fell wholly within the arctic circle, &c. These notices are very imperfectly given by Strabo, and have been omitted in the summary given in the text.

[6] Lib. ii. c. 5, §§ 35-43.

[7] This is distinctly stated by Strabo (ii. 5, p. 132), who himself adopts this measurement. Eratosthenes, as we have seen, made the interval only 8300 stadia (Chapter XVI. p. 639, and Note C), but he reckoned the parallel through

situated, according to his computation, midway between the equator and the tropic. Towards the west it passed through the southernmost portions of Libya, and towards the east through the southern extremity of Taprobane, or even a little to the south of it.[8]

The next parallel lay through Meroë — a point which assumed a special importance in the eyes of all the Alexandrian geographers—and Ptolemaïs Epitheras on the coast of the Troglodytes. It was distant 3000 stadia from the preceding. Along this line the longest solstitial day was of thirteen hours. The same line prolonged to the east passed through the southern extremity of India.

The third line was drawn through Syene, and was considered as coinciding with the summer or northern tropic. It passed about 5000 stadia to the south of Cyrene; and towards the east traversed the land of the Ichthyophagi on the coast of Gedrosia, and was continued through India. For all places along this line the sun was vertical at the summer solstice, and the longest day was of thirteen hours and a half. It was distant 5000 stadia from the parallel of Meroë.

'The fourth parallel was drawn (apparently for convenience' sake) through Alexandria and Cyrene, at a distance of 5000 stadia from the preceding, though the line which had a solstitial day of fourteen hours lay about 400 stadia farther south.[9] Alexandria and Cyrene were thus assumed to be on the same parallel, though they really differ by a degree and a half of latitude, while the same circle was supposed to pass only 900 stadia to the south of Carthage—which really lies more than

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the Land of Cinnamon as 3400 stadia to the south of Meroë, while Hipparchus made the difference only 3000 stadia.

[8] Strabo, ii. 5, § 35, pp. 132, 133. This expression certainly seems to be at variance with the statement of Pomponius Mela that Hipparchus doubted whether Taprobane was an island of vast size, or the beginning of a new world (prima pars orbis alterius, Mela, ii. § 70). But the authority of Mela is worth very little, and the silence of Strabo on so bold an hypothesis seems conclusive against it. Hipparchus in this instance doubtless followed Eratosthenes, who had already (as we have seen) assumed it as one of the cardinal points in his map of the world that this first parallel of latitude passed through Taprobane.

[9] Strabo, ii. 5, § 38, p. 133.

five degrees and a half to the north of Alexandria—and was thence produced through the middle of Maurusia (Mauretania) to the Western Ocean. Such grave errors with regard to the position of places which might be naturally supposed to be well known, show how far Hipparchus was from being able to attain in practice that accuracy on which he laid so much stress in theory. The same line produced to the east passed through Lower Egypt, a part of Syria,[1] Babylonia,[2] Susiana, Persia, Carmania, and the interior of Gedrosia to India.

He next mentioned, as it were in passing, that for Ptolemaïs in Phœnicia, Sidon and Tyre[3] the longest day was fourteen hours and a quarter. This circle was about 1600 stadia north of Alexandria, and 700 north of Carthage.

§ 7. The next parallel, which corresponded to a solstitial day of fourteen hours and a half, and was distant 3640 stadia from Alexandria,[4] passed through the middle of the island of Rhodes, and just to the south of Xanthus in Lycia, as well as through the southern extremity of the Peloponnese, and 400 stadia to the south of Syracuse. This was the same parallel which, according to Eratosthenes, if prolonged eastward, passed through Caria, Lycaonia, Cataonia, Media, the Caspian Gates and the foot of the Indian Caucasus.

Hipparchus does not appear to have noticed in treating of these *climata* the position of Athens, but we learn from other

[1] Our editions of Strabo (ii. 5, § 38) have *Κοίλης Συρίας καὶ τῆς ἄνω Συρίας*; but these words are certainly corrupt. See Groskurd's and Kramer's notes. It is however impossible to restore the true reading.

[2] There is little doubt that we should here read *Βαβυλωνίας* for *Βαβυλῶνος*, as we know that Hipparchus himself placed Babylon at 2500 stadia farther north than Pelusium, which was on the same parallel with Alexandria (Strabo, ii. p. 88). Hence it could only be the southernmost portions of the province that could be in the same latitude with Alexandria (see Groskurd's note on Strabo, ii. p. 134).

[3] The mention of these places sufficiently shows how little Hipparchus himself was pretending to scientific accuracy. For he could not have been ignorant that Ptolemaïs, Tyre and Sidon followed one another at considerable intervals from south to north, the last being in fact more than forty minutes (400 stadia) to the north of the first.

[4] This statement again differs from Eratosthenes, who had calculated the difference in latitude between Alexandria and Rhodes at 3750 stadia (see Chapter XVI. p. 639); but this in all probability referred to the *city* of Rhodes, while Hipparchus especially specifies that the line passed through the middle of the island.

passages[5] that he placed that city 37 degrees north of the equator; just about a degree farther south than its true position. So little did he possess trustworthy observations even for the best known localities.

His next parallel was drawn through Alexandria Troas (near the entrance of the Hellespont), Amphipolis on the Thracian coast, Apollonia in Epirus, and across Italy, passing to the south of Rome and north of Naples. The longest day was of fifteen hours. As this line derives special interest from its connecting Greece with Italy, it is worth while to point out that while Alexandria Troas is situated about 15 G. miles south of the parallel of 40°, Amphipolis and Apollonia lay more than 40 miles north of the same parallel, which again instead of passing between Rome and Naples, runs about 50 miles *south* of the latter city. Thus his positions as compared with one another deviated from the truth by more than a degree.[6] He placed this parallel about 7000 stadia from that of Alexandria, or 28,800 from the equator.[7]

The next parallel was that through Byzantium and Nicæa—the latter place being obviously mentioned in consequence of its being the birthplace of Hipparchus himself. He had moreover himself made an observation of the gnomon at Byzantium, from whence he concluded the latitude of that place to be the same with that of Massilia, as determined by Pytheas: an unaccountable error, which had the effect of distorting his map of all the surrounding regions. Yet this erroneous conclusion was unfortunately followed by all succeeding geographers to the time of Strabo.[8]

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[5] This is repeatedly stated in his commentary on the Phenomena of Aratus.

[6] The actual line on which the solstitial day is fifteen hours corresponds to 41° 21′. *All* the points indicated were therefore materially too far to the south.

[7] This corresponds very nearly with the truth; as 28,800 stadia, at 700 stadia to the degree, would give 41° 10′. As might be expected, Hipparchus was correct in his astronomy; it was his geography that was deficient.

[8] So unaccountable indeed does this error appear to M. Gossellin that he endeavours to prove that it was due to Pytheas, and that Hipparchus only adopted his observations in both cases. But the testimony of Strabo is precise that Hipparchus "*found* the same relation of the gnomon to its shadow at

The parallel of Byzantium was placed by Hipparchus at a distance of 1500 stadia from that of Alexandria Troas: the longest day was of fifteen hours and a quarter. It was not till one had sailed 1400 stadia farther north that a point was reached where the longest day was fifteen hours and a half. This line, which was apparently an arbitrary one, not marked by any place of sufficient importance to be noticed, was regarded by Hipparchus as just midway between the equator and the pole. It therefore corresponded according to his calculation with 45° of north latitude.[2] This coincides very nearly with the sum of his measures in stadia, which give 31,700 stadia from the equator, while 45° would give 31,500, if we reckon, as Hipparchus undoubtedly did throughout this calculation, 700 stades to a degree.[1]

§ 8. The next parallel, which was distant 3800 stadia from Byzantium, passed through the regions at the mouth of the Borysthenes, and the southern portion of the Palus Mæotis. Here the solstitial day was sixteen hours in length, but during

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Byzantium that Pytheas had done at Massilia" (Strab. i. p. 63 (ὃν γὰρ λόγον εἴρηκε [Πυθέας] τοῦ ἐν Μασσαλίᾳ γνώμονος πρὸς τὴν σκιάν, τὸν αὐτὸν καὶ Ἵππαρχος κατὰ τὸν δμώνυμον καιρὸν εὑρεῖν ἐν τῷ Βυζαντίῳ φησιν), ii. p. 115), and the very unusual exactness with which that proportion is stated (that it was in the ratio of 120 to 42 *minus* one-fifth) points clearly to personal observation.

The proximity of Byzantium to Nicæa, the birthplace of Hipparchus, also explains why he should have taken special pains to make observations at the former city.

[2] The parallel which really gives a day of precisely 15½ hours is 45° 39′, again showing the near approach to accuracy of these calculations of Hipparchus. It was in the application of these mathematical inferences to practical geography that he failed, from the want of correct observations.

[1] There is, however, a difficulty with regard to the numbers of Hipparchus, which we have no means of explaining; as it is evident that the sum of the several distances he has given ought to correspond *exactly* with the measurement of half the distance from the equator to the pole. Gossellin has introduced various arbitrary changes in the numbers given by Strabo, but some of these, as shown by Ukert, are not only unnecessary, but erroneous, and such a mode of solving a difficulty is at best very hazardous. It is clear that there is an error *somewhere*, but *where*, we are unable to decide.

We are distinctly told by Strabo, with reference to this very part of his work, that Hipparchus reckoned 700 stadia to a degree (ii. p. 132). But we must not suppose that he was therefore employing a *different* stadium from that in common use. His error, in common with Eratosthenes (whom he followed), was that of *over-estimating* the quadrant of a great circle, which he reckoned at 63,000 stadia instead of 54,000, its true value in round numbers.

the middle of the summer the twilight lasted almost all through the night, the sun being only a short distance below the horizon.[2] According to the calculation of Hipparchus this latitude coincided with that of the northern parts of Gaul;[3] which he thus placed nearly 5½° to the north of Massilia, or just about the latitude of Paris.

His next parallel was drawn 6300 stadia to the north of Byzantium, and passed to the north of the Palus Mæotis, while to the west it lay still through the northernmost parts of Gaul. Here the solstitial day was of seventeen hours' duration, and the phenomena of the twilight nights were still more remarkable. At the winter solstice in the same latitudes the sun did not rise more than 6 cubits, or 12°, above the horizon.

Beyond this again he pointed out that at a distance of 9100 stadia from the parallel of Massilia, the sun would rise only 4 cubits, and the longest day be of eighteen hours: and beyond that again would come a circle where the longest day was of nineteen hours, and the sun in winter would rise only 3 cubits. Both these circles he appears to have considered as passing through different parts of Britain: but this part of his system is very imperfectly known to us, Strabo, by whom alone it is reported, having considered it as of little importance to geography, as these extreme northern regions were (in his opinion) unknown, and uninhabitable from cold.[4]

It appears certain, however, that Hipparchus, in common with Eratosthenes, adopted the leading statements of Pytheas, and admitted the existence of an island named Thule, where the solstitial day was twenty-four hours long.[5] As an astro-

[2] Strabo, ii. p. 135. Of course this statement, though partly true of the supposed parallel of latitude, is wholly false as applied to the northern shores of the Black Sea, which are really in just about the same latitude as Geneva. As applied even to the latitude of Paris, which is situated in lat. 48° 50', very nearly on the line of sixteen hours' day, it is considerably exaggerated.

[3] ii. 1, pp. 72, 75.

[4] Strabo, ii. p. 135. He here stops with the circle of 6300 stadia north of Byzantium, but in another passage (ii. p. 75) he cites some further observations of Hipparchus, from which the account given in the text is derived.

[5] This is indeed not distinctly stated by Strabo; but as that author throughout censures Hipparchus, in common with Eratosthenes, for attaching credence to the fables of Pytheas, and for

nomer Hipparchus would know, that in proceeding north, this phenomenon would really occur on the Arctic Circle, and hence probably he more readily admitted the statement that it had been actually observed.

§ 9. It must be admitted that, notwithstanding many grave errors, Hipparchus had really made considerable progress towards laying down a correct map of the countries bordering on the Mediterranean, and had introduced some important corrections into that of Eratosthenes. But the case was altogether otherwise with regard to Asia. Here we have seen that the principal parallel of latitude, assumed by Eratosthenes to be continued from the Gulf of Issus through Thapsacus, the Caspian Gates, and the foot of the Indian Caucasus to the Indian Ocean, was really a very fair approximation to the truth, as far at least as the Indian frontier. This parallel coincided generally with the southern foot of the great range that under the names of Taurus, Paropamisus, and Imaus, was considered by Eratosthenes as traversing Asia from west to east. Hipparchus, however, rejected this view—on what grounds we do not know—and carried up almost all the points on this line to latitudes far exceeding the truth, placing even Thapsacus not less than 4800 stadia to the north of Babylon, or more than three degrees and a half beyond its true latitude, and the Caspian Gates nearly on the same parallel.[6] But from this point he conceived the great central chain of Taurus —the existence of which, as a kind of backbone of Asia, he did not dispute—to have a direction to the *north-east*, so as to remove Hyrcania, Margiana, and Bactria successively farther and farther to the north. So far indeed did he carry this displacement, as to remove Bactria proper (the environs of Balkh) which is really in the same latitude with the southernmost part of the Morea, to a level with the northern portions of Britain.[7]

following him in the high latitudes, which he assigned to the northern parts of Britain, there can be little doubt that he accepted his statement with regard to Thule. Had it been otherwise Strabo could hardly have failed to mention the confirmation of his own doubts by so high an authority.

[6] Strabo, ii. pp. 78, 81.

[7] Id. pp. 71–75. According to Strabo's

So far as we can discern from the account given by Strabo (which is by no means clear) this astounding error arose principally from his having adopted the erroneous and greatly exaggerated estimates of the dimensions of India, given by some earlier writers, especially Daïmachus. As Hipparchus had correctly fixed the extent of India towards the south, in accordance with the views of Eratosthenes,[8] he was unable to gain space for the enormous length which he assigned to it (from north to south) without removing the mountain barrier of the Hindoo Koosh (which all admitted to be its northern boundary) much farther to the north than its true position. Hence the countries to the north of this, Bactria, Sogdiana, &c., were in like manner transported into the far regions of Northern Asia, a supposition which, as Strabo observes, is sufficiently negatived by the fact of the great fertility and productiveness of those provinces.[9]

Another error into which Hipparchus fell was probably connected with the preceding. He maintained that the river Indus had its course towards the south-east, instead of flowing from north to south, as had been the received view of all geographers from the time of Alexander.[1] Of his views with

own geography, which brought down Britain far below its true latitude, the parallel of Bactria (as assumed by Hipparchus) would pass altogether to the north of that island, and even of Ierne (Ireland), which he supposed to lie considerably farther north.

[8] The comparatively correct position assigned to the south of India and Taprobane by Eratosthenes and Hipparchus was doubtless based upon the report that those regions lay within the tropic; an observation erroneously applied by others to the parts of India visited by Nearchus and Onesicritus, but which was of course perfectly true with regard to the more southern portions of the peninsula.

[9] Strabo, ii. pp. 73, 75. Strabo indeed greatly exaggerates the degree of cold that must belong to the parallel in question, which, as he observes, would fall far to the north of Ireland, which is itself barely inhabitable (!), but the luxuriant growth of vines in Hyrcania and Bactria, on which he lays especial stress, is undoubtedly a sure criterion of a more southerly climate. The great fertility of the environs of Balkh and Merv (Bactria and Margiana) is attested by all modern travellers.

Throughout this discussion it may be observed that Strabo argues solely from the probabilities of the case, such as climate and natural productions. It is evident that he had no astronomical observations to appeal to, which, however rude and imperfect, would have been decisive of the question.

[1] Strabo, ii. p. 87. In this instance, as in several others, Hipparchus, out of opposition to Eratosthenes, returned to the views embodied in what Strabo calls "the old maps" (καθάπερ ἐν τοῖς

regard to the river Ganges we have no distinct statement, but he doubtless considered it as falling into the Eastern Ocean, and apparently as having a course about parallel with that of the Indus.

§ 10. This fundamental misconception as to the direction of the great mountain chain, led him also to bring up the coasts of Carmania and Persia, and the Persian Gulf, far above their true position in latitude, and thus distorted his whole map of Asia. But besides this great error, his minor criticisms of Eratosthenes, with regard to the distances and relative positions of many points on his map, specimens of which have been preserved to us by Strabo, certainly seem to warrant the observation of that author, that they were dictated by a captious disposition to demand an amount of accuracy that belonged rather to the geometer than to the geographer.[2] Hipparchus indeed was justified in demanding the most perfect accuracy of which the subject would admit, and his theoretical conception of what geography ought to be was in advance of all his predecessors: but he overlooked the imperfect nature of the means at his command, which gave him in reality very little power of rectifying their conclusions.

In several instances indeed he criticized the arguments of Eratosthenes, and rejected his conclusions in order to return to the views of earlier writers, where these (as Strabo points out) were much more erroneous, and those of Eratosthenes substantially correct.[3] To take a single instance: in regard to the regions bordering on the Euphrates, which might be supposed to have been better known to the Greeks in the days of the Seleucidan monarchy, Eratosthenes placed Babylon more than 2000 stadia to the east of Thapsacus, while Hipparchus *assumed* that it was not more than 1000.[4] The real

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ἀρχαίοις πίναξι καταγέγραπται): those namely before the time of Eratosthenes. (See also ii. 1, p. 90.)

[2] Strabo, ii. pp. 79, 87, &c.

[3] This was the case especially with the strange error with regard to the position of India. This had been in great measure corrected by Eratosthenes, while Hipparchus returned to the old view, and carried it to an exaggerated extent (Strabo, ii. 1, §§ 2–4).

[4] Strabo, ii. p. 90.

interval is more than 5½° of longitude or about 240 G. miles, (2400 stadia), so that the estimate of Eratosthenes was in reality considerably *below* the truth. Throughout the long discussion which Strabo has preserved to us, of the geography of these regions, and the points connecting them with Alexandria, it would appear that Hipparchus was generally wrong, while the views of Eratosthenes were approximately correct. It is difficult, however, to pronounce judgement with confidence in such a controversy without being able to consult and compare the original authorities.

One thing, however, is curious to observe: how both Eratosthenes and Hipparchus are aiming at something like geometrical correctness, and applying geometrical arguments where they had no accurate observations to go on, or even approximately correct measurements of distances. But with all this, it is impossible not to see that they had an idea, though dim and vague, of a kind of triangulation analogous to that by which a modern geographer would endeavour to connect distant points with which he was but imperfectly acquainted.

§ 11. With regard to longitudes it does not appear that Hipparchus was able to make any considerable advance on the results obtained by his predecessor. He was indeed, as we have already pointed out, the first to indicate the true method of determining longitudes by the comparative observation of eclipses,[5] but no such observations were at his command, nor have we any account of his having attempted to institute them. The very imperfect means at the command of the ancients for the measurement of time would indeed have sufficed to prevent their being made with any approach to correctness; but even such rough approximations as they could give would have been a valuable assistance.

Hipparchus indeed wrote throughout as an astronomer, rather than a geographer. Hence he does not seem to have

[5] Strabo, i. 1, § 12, p. 7. Ptolem. *Geogr.* i. 4. See preceding chapter, p. 633.

obtained, or even sought to obtain, any additional information concerning the western regions of Europe, beyond what was known to his predecessors, though the course of events had in his day had the effect of opening out new sources of knowledge, of which he might readily have availed himself. In one instance we find him recurring to an error which had been generally received in earlier times, but had apparently been rejected by Eratosthenes,[6] in making the Danube flow with one arm into the Adriatic, and with the other into the Euxine.[7] This strange misconception continued indeed to be repeated by many Greek writers long after his time.

§ 12. On one of the fundamental conceptions of geography Hipparchus departed from the view which was generally adopted in his time, as well as by most succeeding writers. He refused to admit that the habitable world was surrounded on all sides by sea, or that the Atlantic Ocean was continuous with the Indian Ocean, and that again with the sea to the north of Scythia.[8] This scepticism appears to have been based, not, as in the case of Herodotus, upon the mere absence of proof, but upon certain observations of Seleucus (a Babylonian author otherwise unknown) with regard to the tides, which appeared to Hipparchus to be incompatible with the hypothesis of a continuous circumfluent ocean.

In regard to the question, so much discussed among the Alexandrian writers, of the Homeric geography, Hipparchus altogether rejected the views of Eratosthenes, and adopted the popular explanation, according to which the localities visited by Ulysses were identified with well-known places on the shores of the Mediterranean.[9]

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[6] This is not indeed clearly stated by Strabo, but may probably be inferred from his expression that Hipparchus shared this erroneous opinion "with some of his predecessors." It was apparently one of the notions of the earlier geographers, which he revived in opposition to Eratosthenes.

[7] i. 3, § 15, p. 57.

[8] Strabo, i. 1, § 9.

[9] Ibid. i. 1, § 2, p. 2.

SECTION 2.—*Polybius.*

§ 1. Just about contemporary with Hipparchus was an author of a very different character—the historian POLYBIUS. Of his merits as a political or historical writer it does not belong to our present subject to speak, but the publication of his great historical work may be considered also as marking an important epoch in the progress of geographical knowledge. Polybius was the first to avail himself of the new sources of information that had been opened out to him by the wars and conquests of the Romans in Western Europe, and which had placed the knowledge of those countries on an entirely new footing. As he himself remarks, while Alexander had opened the way to a more complete knowledge of the East, it was the conquests of the Romans that had first led to a similar acquaintance with the West, and had afforded the means of access to regions hitherto almost unknown to the Greeks.[1]

These new sources of information had been hardly beginning to be available in the days of Eratosthenes, and although the rapid extension of the Roman power during the half century that followed his death (B.C. 196–146), and the repeated wars that brought it into collision with the Greek monarchies both in Europe and Asia, would seem likely to have awakened the interest of the Greeks in general in all that their formidable neighbour was doing elsewhere, there is no trace of their having taken advantage of the opportunity thus afforded them. We have seen how imperfect was the knowledge possessed by Eratosthenes of the western countries of Europe, Spain, Gaul, and the regions north of the Adriatic: and although his successors could hardly fail to have acquired an increased acquaintance with these regions, it does not appear that this had been yet embodied in any methodical form, so as to render it available to the literary public in general.

§ 2. Polybius himself had indeed enjoyed peculiar advantages

[1] Polyb. iii. 59.

in this respect from the circumstances of his life and political career. Born at Megalopolis in Arcadia about B.C. 204, he was the son of Lycortas, one of the most distinguished leaders of the Achæan League, and was early initiated in political and military affairs. After the Second Macedonian War and the defeat of Perseus (B.C. 167) he was one of the Achæans selected as men of rank and influence to be sent as hostages to Rome, where he remained seventeen years; and during this period he had not only the opportunity of studying the political institutions and history of Rome, which were still very imperfectly known to the Greeks in general, but he contracted close personal friendships with many of the leading Roman statesmen; among others with the younger Scipio Africanus, whom at a later period he accompanied during the Third Punic War. Polybius was himself present at the destruction of Carthage in B.C. 146, and was employed by Scipio in the command of a Roman squadron to explore the coasts of Africa. It is probable also that he accompanied Scipio during the war against Numantia (B.C. 134): at all events it is certain that he not only visited Spain and Gaul, as well as Africa, but undertook, according to his own account, long and dangerous journeys through those countries, extending even to the shores of the Atlantic, with the express view of making himself acquainted with their geographical position, as well as their natural characters and productions.[2] At what period of his life Polybius undertook these extensive travels we are not distinctly told: but it is difficult to place them before the fall of Carthage, as, during the whole period of his compulsory residence at Rome, he was in a certain sense a prisoner, and after he was set at liberty, he returned in the first instance to Greece, where he took an active part in public affairs, until summoned by Scipio to attend him to the war. His historical work was certainly not completed till after the same period; and ended with the destruction of Corinth, B.C. 146. Polybius

[2] Polyb. iii. 59.

himself survived that event by more than twenty years, having lived to the advanced age of 82; his death may probably be placed about B.C. 122.[3]

No historian of antiquity was more fully alive to the importance of geography, as an aid to history, than Polybius. This is not only apparent from the geographical remarks interspersed through his whole work, but, like his predecessor Ephorus, he had set apart one whole book for a systematic treatise on geography, in which he had fully developed his views upon that subject. Unfortunately this book—the thirty-fourth of his voluminous work—is one of those lost to us: the fragments preserved to us by Strabo and others being very inconsiderable. From these fragments, however, combined with the remarks introduced in earlier parts of his history, we are enabled to gather the following leading outline of his geographical views.

§ 3. He considered, in accordance with the views generally received in his time, that Europe was bounded by the Tanaïs on the east: and Asia was separated from Africa by the Nile: the strait at the Pillars of Hercules of course forming the boundary between Europe and Africa.[4] The whole of the north coast of Africa from the Columns to the Altars of the Philæni, on the shore of the Great Syrtis,[5] was subject to the Carthaginians, who had also extended their rule (previous to the Second Punic War) over the whole coast of Spain from the Columns to the headland where the range of the Pyrenees descended to the Mediterranean.[6] With the Pyrenees themselves he was well acquainted, and rightly conceived them as extending from sea to sea, and separating the Kelts or Gauls from the Spaniards. Both these nations he knew to extend

[3] For the chronology of the life of Polybius, see Clinton's *Fasti Hellenici*, vol. iii. p. 526; and the excellent article on his life in Dr. Smith's *Dict. of Biogr.* vol. iii. pp. 443–448.

[4] Polyb. iii. 39.

[5] The name is here found for the first time; but it is mentioned incidentally as the well-known limit of the Carthaginian dominions to the east (iii. 39, x. 40). The legend connected with it is first related by Sallust (*B. Jug.* 79).

[6] Id. iii. 39.

across to the outer sea, or Atlantic Ocean, but of the regions bordering on that Ocean (with the exception of part of Spain)[7] he seems to have had very imperfect information. As we have already seen he rejected altogether the authority of Pytheas and his statements concerning the western coasts of Spain, Gaul, and Britain, as well as his account of Thule and the remoter lands towards the north. At the same time he had very little to substitute in their place, and though he had evidently *some* information concerning the British Islands, and the lands from whence tin was brought,[8] as well as concerning the northern regions of Europe, it was evidently of a very vague and general character. Indeed he himself tells us that Scipio was unable to obtain any trustworthy information concerning Britain from the merchants of Massilia or Narbo, or even from those who came from Corbilo, an important emporium of trade, situated apparently at the mouth of the Loire.[9] Unfortunately the part of his work in which he treated specifically of these countries is lost to us: and the same thing is the case with regard to the few notions he professed to have picked up concerning the northern regions of Europe, extending from Gaul to the Tanaïs.[1] We may, however, infer from the total silence of Strabo, that they contained little, if anything, of importance. Polybius was indeed fully conscious of his ignorance of these regions, and was content (like Herodotus) to leave it in uncertainty whether there was continuous sea to the north of Europe or not.[2]

[7] He was certainly acquainted with the mouth of the Tagus, and seems to have obtained particular information concerning the western shores of Lusitania. See a passage cited from his 34th book by Athenæus, vii. p. 302 c.

[8] Id. iii. 57. This passage is important as being the first where mention is found of the production of tin, in connection with Britain. It is also remarkable for the use of "the British Islands" in the plural, but this expression apparently relates to Britain and the adjoining Tin Islands (Cassiterides), rather than to the more distant and outlying Ierne or Hibernia, with which it is uncertain whether Polybius was acquainted.

[9] xxxiv. 10. The name of Corbilo is not mentioned by any later writer, and its site cannot therefore be fixed. Strabo, who cites it from Polybius, says only that it was an emporium on the river Liger, but from the connection in which he mentions it, we may probably infer that it was at the mouth of that river

[1] Polyb. iii. 37.

[2] Ibid. iii. 38.

§ 4. His knowledge of Spain, which he had himself visited, and which had been to a great extent opened up by the wars of the Romans in that country, undoubtedly far exceeded that which any other Greek had ever possessed. His geographical account of the peninsula is indeed unfortunately lost, but the number of names of towns, as well as of the native tribes, which he incidentally mentions, sufficiently attests the extent of his knowledge. If, indeed, this part of his work was not written till after he had accompanied his friend Scipio to the Numantine war, he must have had ample opportunities of informing himself concerning the political, as well as the physical, geography of Spain. He was well acquainted with the great rivers: the Bætis, the Anas, and the Tagus, and even attempted an estimate of the length of the last; which he considered to have a course of 8000 stadia from its sources to the Ocean.[3] He gave an account also of the great fertility of Lusitania, which has every appearance of being derived from personal observation; as well as of the silver mines near New Carthage, which were still extensively worked in his time, giving employment, it was said, to not less than 40,000 persons.[4] Their produce was estimated at 25,000 drachmæ a day, which was probably an exaggeration.

Of Gaul he apparently knew much less: though the Romans had now established permanent footing in its south-eastern portions and the commercial relations of Massilia with different parts of the country had doubtless opened out new sources of information concerning the interior, and even the external coasts, which were before inaccessible. But the more accurate and complete knowledge of Gaul, which had been acquired in the time of Strabo, led him to attach less value to the statements of Polybius, and consequently we rarely find his authority cited, and are left much in the dark as to the actual extent of his knowledge. From a passage of his work still extant, however,[5] it would appear that he knew the names at

[3] xxxiv. 7, ap. Strab. p. 106 [4] Polyb. ap. Strab. p. 147. [5] iii. 38.

least of the principal nations adjoining the Western Ocean, which he promises to give in detail elsewhere. It seems certain also that he was acquainted with the outlet of the Loire (Liger) into the Atlantic Ocean, and even with the existence of the Morini, as a people divided only by a narrow strait from the island of Britain.[6] He appears to have considered this as the most northern part of the continent of Europe. This circumstance would alone show how complete was his ignorance of the adjoining regions. The most remote people of the interior of whom we find mention are the Arverni:[7] but there is little doubt that his knowledge in this direction was really more extensive.

§ 5. In no respect was Polybius more in advance of all his predecessors than in his knowledge of the Alps. The importance of this great chain of mountains as one of the main geographical features of Europe could not fail indeed to force itself upon the attention of all observers as soon as the Romans had extended their conquests to the foot of the great barrier, which encircled Italy on the north, and appeared to cut off all communication with the nations beyond. But already before the birth of Polybius, Hannibal had shown that it was possible to conduct an army across this formidable mountain barrier: and the experiment was subsequently repeated by Hasdrubal with comparatively little difficulty. The Romans indeed do not appear to have followed their example until a much later period, so far as the passage of armies was concerned, as their troops could be transported with much greater facility by sea to Massilia and the mouths of the Rhone. But there can be no doubt that the passes across them were already well known and frequented by the neighbouring tribes, and Polybius him-

[6] See Pliny, *H. N.* iv. 23, § 122. At the same time it must be admitted that Pliny's expression (unde per Lugdunum ad portum Morinorum Britannicum, qua videtur mensuram agere Polybius) is ambiguous, and Pliny may have himself supplied the *name*.

[7] Their name is found in the account of the march of Hasdrubal through Gaul, to join his brother Hannibal in Italy, as given by Livy (Liv. xxvii. 39); and though this part of the work of Polybius is lost, we may safely assume that it was derived from him by Livy.

self had acquired accurate information concerning them. He states indeed expressly that he had himself followed in detail the route of Hannibal over the mountains:[8] his description of the localities is lively and picturesque, and as he had himself no doubt of the route taken by the great Carthaginian general, we may feel confident that he would have set the question at rest for all subsequent inquirers had he not unfortunately adopted the plan of omitting almost all proper names, whether of tribes or places, as barbarous in sound and utterly unknown to his Greek readers. To us on the contrary they could hardly have failed to convey most valuable information.[9]

In the time of Polybius it would appear that only four passes across the main chain of the Alps were generally known and used: the first, through the Ligurians, following the coast of the Tyrrhenian Sea: next that through the Taurini, which was supposed to be the one followed by Hannibal; thirdly, that through the Salassians (an expression applicable to either the Great or the Little St. Bernard); fourthly, that through the Rhætians—the modern Tyrol—which from its great comparative facility must have been frequented in all ages.[1] Unfortunately the statements of Polybius on this subject are preserved to us only at second-hand by Strabo, and we have thus no means of estimating the amount of information which he really possessed concerning the passes thus enumerated.

§ 6. But there can be no doubt that his knowledge of the Alpine nations that bordered Italy on the north, and extended from thence to the Danube must have been very imperfect. It was not till the reign of Augustus that the Roman arms were carried into these wild regions: and there was probably but little commercial intercourse with the tribes north of the Alps until those inhabiting the mountains had been brought under the dominion of Rome. But the foundation of the Roman colony of Aquileia, as early as B.C. 181, doubtless led to more extensive commercial relations with the neighbouring

[8] iii. 48. [9] Note A, p. 37. [1] Polyb. ap. Strab. iv. 6, p. 209. See Note A.

tribes in this quarter: and the discovery soon after of gold mines of extraordinary richness in the land of the Taurisci, a Norican tribe,[2] must have tended greatly to increase the communication with Italy. Such was the effect produced by the sudden influx of gold from this source, that we are assured the price fell directly throughout Italy by one-third.[3]

Notwithstanding the valuable information acquired by Polybius concerning the Alps, and its great superiority to that of his predecessors, we must not suppose that he had anything like a clear geographical acquaintance with the course and configuration of that great chain. He was indeed familiar—as any one who had visited the north of Italy must needs be—with its great extent, which he estimated at 2200 stadia, measured along the plains at the foot of the mountains (a statement very much beneath the truth), and he rightly judged them to be of much greater elevation than any of the mountains in Greece or the neighbouring countries. But his mode of estimating their height was singularly rude and imperfect: for (he said) it was possible for any active man to ascend the most lofty of the Greek mountains—Taÿgetus, Parnassus, Olympus, &c.—within a single day, or thereabouts, while it would take any one more than five days to ascend the Alps.[4] Whether this refers to the journey across the passes, or was founded upon some vague stories he had heard from the moun-

[2] *ἐν τοῖς Ταυρίσκοις τοῖς Νωρικοῖς.* This is the first mention of the name of the Noricans, afterwards so familiar to the Roman writers. Pliny (iii. 20, § 123) appears to regard the Tauriscans and Noricans as synonymous terms; while Strabo calls the Tauriscans a Norican tribe (iv. 6, § 9), and this appears to have been the general view, but their position is not fixed by any ancient writer.

[3] Polyb. ap. Strab. iv. 4, p. 208. From his description it is evident that this gold was derived from "diggings," very much in the same manner as that now found in Australia. It often occurred in lumps or "nuggets" of the size of beans or peas. The works were doubtless soon exhausted, and seem to have ceased to exist long before the time of Strabo, who refers to them quite as a thing of the past.

[4] xxxiv. 10. It is curious to compare this with the statement of Strabo that the mountains in the land of the Medulli, which he regarded as the highest in the whole range, were 100 stadia *in the direct ascent* of the highest part: a very moderate estimate, as his words clearly imply that he is not speaking of their perpendicular height (*τὸ γοῦν ὀρθιώτατον αὐτῶν ὕψος σταδίων ἑκατὸν ἔχειν φασὶ τὴν ἀνάβασιν, κἀνθένδε πάλιν τὴν ἐπὶ τοὺς ὄρους τῆς Ἰταλίας κατάβασιν.* Strabo, iv. 6, § 5).

taineers of the time actually required to climb the highest peaks, it is in any case a palpable exaggeration. At the same time his description of the Rhone (Rhodanus) as having its sources "in the most northerly parts of the Alps above the inmost recess of the Adriatic," and flowing from thence towards the south-west,[5] sufficiently indicates how vague, or rather how utterly erroneous, was his conception of the general configuration of the Alpine chain.

§ 7. His knowledge of the geography of Italy was doubtless greatly superior to that of any of his predecessors: the more northern parts of that country, which had been previously very imperfectly known to the Greeks, having been opened out by the conquests of the Romans in Cisalpine Gaul, Liguria and Venetia. His account of the great lakes of Northern Italy, and the rivers that flowed from them, though distorted in our existing copies of Strabo, was evidently originally quite correct,[6] and shows an accurate knowledge of the countries in question. But his general description of the peninsula, and the nations that inhabited it, which undoubtedly found a place in his thirty-fourth book, has been unfortunately lost to us. The expression in one passage[7] where he speaks of Italy as a kind of triangle, having the Alps for its base, and the promontory of Cocinthus for its vertex, would seem at first to indicate a very imperfect idea of its figure; but it is clear that this similitude is to be taken only in a very rough and general sense, and we learn from another passage cited by Strabo,[8] that he was well acquainted with the peculiar configuration of the southernmost part of the peninsula, and its two long projecting arms separated by the deep gulf of Tarentum. In like manner his description of Cisalpine Gaul, and the relations between the two great chains of the Alps and the Apennines

[5] iii. 37.

[6] Polyb. ap. Strab. iv. 6, § 12. It is admitted by all recent editors, that the error in our existing copies, by which the Addua is described as flowing from the Lake Verbanus, and the Ticinus from the Lake Larius, is a mere fault of the copyists and cannot be imputed either to Polybius or Strabo.

[7] ii. 14.

[8] Ap. Strab. v. i. § 3.

that bounded it, though falling far short of the requirements of modern geography, still presents a clear and intelligible picture, exceeding almost any similar passage to be found in earlier writers. In describing these regions he evidently does so in the belief that they were still imperfectly known to his contemporaries in general, and takes occasion in passing to censure the ignorance that Timæus especially had shown concerning them. That writer, as having been a native of Sicily, might naturally have been presumed to have possessed better means of information concerning Italy and the adjoining islands than most other Greeks, and probably enjoyed a reputation on that account; for which reason Polybius especially selected him for criticism, and showed up at considerable length the ignorance he had displayed with regard both to Italy and the adjoining islands of Sardinia and Corsica.[9]

§ 8. Another quarter in which the wars of the Romans had first led the way to a more accurate geographical knowledge was in regard to the countries bordering on the Adriatic. Nowhere does the ignorance that prevailed down to a late period among the Greeks appear more inexplicable than in regard to this inland sea. From a very early period the Greek colonies of Apollonia and Epidamnus (or Dyrrachium), situated just within its entrance, had risen to considerable importance and become the seats of a flourishing commerce:[1] while soon after the beginning of the fourth century B.C. the foundation of new colonies in the islands of Pharos and Issa, and that of Ancona on the opposite coast of Italy, must have led to greatly increased commercial relations with the adjoining nations, and to a more familiar knowledge of its shores.[2] Yet

[9] xii. 3, 4. It is amusing to find Polybius himself, after stating that Corsica produced no wild animals, except foxes, rabbits, and moufflons, or wild sheep, proceeding to give a particular account of rabbits, as an animal with which he evidently presumed his readers to be unacquainted.

[1] This is sufficiently attested by their coins, which are found in large numbers in the countries adjoining the Adriatic, and even far into the interior, and some of which belong to quite an early period. Dyrrachium (or Epidamnus, as it is called by the historian) figures as a place of importance in Thucydides, at the outbreak of the Peloponnesian War (Thucyd. i. 24).

[2] The colonies of Pharos and Issa were founded by the Parians about B.C.

we find the Greek writers long afterwards continuing to transmit the old erroneous notions concerning the countries at the head of the Adriatic which they had received from their predecessors. Thus Timæus, as we learn from Polybius, while he repeated the old fables concerning the Eridanus, and the amber tears of the poplars on its banks, showed the greatest ignorance of the real geography of these regions.[3] We have seen also that even Hipparchus, the contemporary of Polybius himself and an enlightened geographer, accepted the popular notion that the Ister or Danube discharged a part of its waters by one arm into the head of the Adriatic:[4] while writers subsequent to Polybius were still content to repeat the strange misconception that the Hyllic Chersonese on the coast of Dalmatia was about as large as the Peloponnese![5] The wars of the Romans with the Illyrian queen Teuta, and at a later period with the Dalmatians, being of necessity carried on principally by sea, must have led to a comparatively accurate knowledge of the eastern shores of the Adriatic: but the description of them by Polybius, which was contained in his special geographical treatise, is unfortunately lost to us. It appears however that he was still very imperfectly acquainted with its geographical form and dimensions, and had a very exaggerated idea of its extent.[6]

387, with the assistance of Dionysius of Syracuse, who was desirous of establishing his power over the whole of the Adriatic (Diodor. xv. 13). Ancona, on the contrary, according to Strabo, was founded by fugitives from Syracuse, who sought to escape from the despotism of the tyrant (Strabo, v. p. 241). Hence Juvenal calls it "Dorica Ancon." (*Sat.* iv. 40). It was the only Greek colony in this part of Italy.

[3] Polyb. ii. 16.

[4] Strabo, i. 3, § 15.

[5] Scymnus Chius, vv. 773–776. According to this author, who is doubtless following earlier authorities, the Danube flowed by five mouths into the Euxine, and by two into the Adriatic.

[6] Dicæarchus had previously stated that the distance from the Peloponnese to the head of the Adriatic was *greater* than that from the same point to the columns of Hercules, which he estimated at 10,000 stadia! (ap. Strab. ii. 4, p. 105.) Polybius himself gives the length of the Adriatic from the Peloponnese (opposite to Leucadia) to the head of the Gulf of Quarnero at 8250 stadia (ap. Strab. *l. c.*), still an enormous over-statement; the real distance being less than 600 G. miles. Hence, as usual, Gossellin tries to explain his error by supposing him to have made use of a *smaller* stade. But as the distances given from the Peloponnese to Leucadia, thence to Corcyra, and thence again to the Acroceraunian promontory, are all approximately correct, while that along the Illyrian coast is greatly in excess, he is driven to the

§ 9. Another point on which the Romans had contributed a material addition to the accuracy of geographical knowledge was by the construction of the celebrated Via Egnatia, leading direct from Apollonia to the shores of the Propontis. The value of such a line of high-road, with *measured* distances, connecting the Adriatic with the Ægean and the Propontis, would have been an invaluable resource to the ancient geographers, had they known how to avail themselves of it, in the manner that a modern geographer would have done. But even as it was, it became an important means of rectification of the notions previously existing. Eratosthenes, by a strange and unaccountable error, had estimated the interval between the two seas (the Adriatic and Ægean) at only 900 stadia (90 G. miles) while Hipparchus, correcting him, had correctly asserted that it was more than 2000 stadia.[7] Polybius, following the line of the Egnatian Way, gave the distance from Apollonia to Thessalonica as 267 Roman miles, or 2136 stadia. From thence to Cypsela on the river Hebrus he reckoned 268 miles: apparently the road had not at that time been carried any farther.[8] These distances agree almost exactly with those found at a much later period in the Antonine Itinerary,[9] thus showing the great value of the new source of information now for the first time introduced into geography. Of this Polybius was fully aware, and he repeatedly alludes to the great advantage derived from the lines of Roman roads, "with the miles measured and marked along them."[1] But he does not appear,

expedient of supposing Polybius to have employed one kind of stade in the first part of the passage and another in the latter! It would seem much more simple to admit that the former distances were correct, because they were well known to the Greeks, the latter was exaggerated because it was still imperfectly known. The very broken and irregular conformation of the Dalmatian coast would also contribute greatly to the difficulty of estimating the length of the *paraplus*, and the strange misconception concerning the Hyllic peninsula probably arose from the same cause.

[7] Strabo, ii. 1, § 40, p. 92.

[8] Polyb. ap. Strab. vii. p. 322.

[9] Itin. Ant. pp. 329–332. In the itinerary the line of road is naturally continued to Byzantium, but when first constructed it was undoubtedly directed to the Hellespont, not to the Bosphorus.

[1] *ταῦτα γὰρ νῦν βεβημάτισται καὶ σεσημείωται κατὰ σταδίους ὀκτὼ διὰ Ῥωμαίων ἐπιμελῶς*, iii. 39. See also xxxiv. 12, concerning the Egnatian Way.

any more than preceding geographers, to have pointed out any mode of correcting these *itinerary* distances, in order to apply them to the determination of the *geographical* intervals, and the true position of the points thus connected. The want of all power of taking observations of longitude deprived the ancient geographers of the most ready and important means of correction; but we find no trace of their applying systematically the simple and obvious expedient of deducting a given portion of the itinerary distances for the windings of the road, in order to arrive at a nearer approximation to the direct distances between any given points.

§ 10. Polybius had himself visited Byzantium, and his description of the peculiar site of that city, and the advantages it derived from its position, in regard to the trade with the Euxine and the Palus Mæotis, is one of the most valuable that has been left us from antiquity. It is worthy of remark that he prefaces these details with the excuse that they were not generally known, on account of the place lying rather out of the way of those parts of the world that were generally visited.[2] It does not appear that he had himself penetrated any farther within the Euxine, but he had clearly obtained good information concerning that sea, as well as the Palus Mæotis,[3] and the connecting strait of the Cimmerian Bosporus: and his observations on the currents of the two straits, and the physical changes that were going on in the two seas are a very interesting specimen of early speculations on physical geography.[4] His inference, that from the great amount of alluvial deposit brought down by the numerous rivers flowing into the

[2] iv. 38. *διὰ τὸ μικρὸν ἔξω κεῖσθαι τῶν ἐπισκοπουμένων μερῶν τῆς οἰκουμένης.* Yet he directly afterwards speaks of his own times as a period when all countries were visited and become accessible, both by land and sea (*τῶν νῦν καιρῶν, ἐν οἷς πάντων πλωτῶν καὶ πορευτῶν γεγονότων*, iv. 40).

[3] One proof of this is that he was well aware of the small size of the Palus Mæotis as compared with the Euxine, as he reckons the circumference of the one at 8000 stadia, of the other at 22,000 (iv. 39). Earlier writers, as we have seen, had supposed the Palus Mæotis to be half as large as the Euxine: and even long after the time of Polybius very exaggerated notions were entertained of its size and extent.

[4] Polyb. iv. 39–42.

Euxine and Palus Mæotis, the former sea would gradually become shoal, as the latter was already in his day,[5] and that both would eventually be filled up—was unquestionably correct in theory; but he seems to have greatly overrated the rapidity of the process, chiefly from not having made sufficient allowance for the great depth of the Black Sea. Even the shallow Palus Mæotis, though growing continually shallower, is still far from being filled up, and Polybius would doubtless be much surprised, could he compare its present condition, at the small amount of change that has actually taken place in 2000 years.[6]

§ 11. Of the knowledge possessed by Polybius of Asia we have very imperfect means of judging. But there is no reason to suppose that he had any important sources of information concerning the more distant regions of that country, which were not available to Eratosthenes. Indeed he himself in one passage spoke of Eratosthenes as the best authority concerning the Asiatic provinces from the Euphrates to the Indus.[7] At the same time there can be no doubt that had his account of the campaigns of the Seleucidan kings in the remoter provinces of their empire been preserved to us entire, we should have derived from it many valuable contributions to the more detailed knowledge of those countries. The most important of these operations was the expedition of Antiochus the Great with a view to reduce the revolted provinces of Upper Asia again to submission. From the extant fragments of this part of his history we learn that Antiochus, after defeating Arsaces, king of

[5] Aristotle had already pointed out this fact (*Meteorologica*, i. 14, § 29), and drawn the same inference as Polybius. That philosopher observes that the Palus Mæotis was no longer navigable in his day for the same sized vessels as it had been *sixty years before*, a very curious fact, which he had doubtless learnt from Greek traders. Polybius tells us that in his day the greater part of it was only from 7 to 5 fathoms deep, and could not therefore be navigated *by large ships* without a pilot (iv. 40), a clear proof of the size of the trading ships that frequented the Euxine. At the present day the greater part of it has still a depth of about 6 or 7 fathoms (Admiralty chart).

[6] See on this subject the observations of Dr. Goodenough in the *Journal of the Geographical Society*, vol. i. pp. 105–107.

[7] Polyb. ap. Strab. xiv. p. 663.

Parthia, and reducing Euthydemus, king of Bactria, to submission—though leaving him the title of king—crossed the (Indian) Caucasus, and descended into India, where he renewed with Sophagasenus, the Indian king, the relations of friendship contracted by Seleucus I. with Sandracottus, about 100 years before, and received from him a number of additional elephants. He afterwards accomplished his return through Arachosia, and after crossing the river Erymanthus (evidently the Etymander, or Helmund) proceeded through Drangiana into Carmania, where he wintered.[8] Some further details with regard to this latter part of his march would have been peculiarly interesting, as the route from Drangiana into Carmania lies across an arid and perilous desert, which has only very recently been traversed by any modern traveller.[9]

An incidental notice of the town of Gerrha on the Persian Gulf is interesting as showing the extensive commercial relations maintained by the inhabitants with other parts of Arabia, from whence they derived large quantities of myrrh and frankincense, as well as with the Greeks of Seleucia. Antiochus appears to have intended to reduce the city and neighbouring tribes, but was ultimately content to leave them in enjoyment of their liberty; a concession which they however purchased by magnificent presents.[1]

§ 12. From the few portions that remain to us of this part of his history it seems probable that Polybius followed, in regard to the remoter provinces of Asia, the same rule that he had laid down to himself with respect to Gaul and the Alpine tribes, of introducing as few proper names of places as possible, except such as might be supposed already familiar to Greek ears: like Hecatompylus and Zariaspa. Fortunately it was otherwise with regard to Asia Minor, with which the Greeks in his day would in general be sufficiently well acquainted; and his accounts of the campaigns of the Roman and the Syrian

[8] Polyb. x. 49, xi. 34. These operations may apparently be assigned to the years 206 and 205 B.C.

[9] See Chapter XII. p. 521.

[1] Id. xiii. 9.

monarchs in that country are among the most valuable materials for the determination of its geography. These have indeed been preserved to us chiefly at second-hand; but the few fragments of the original that remain are sufficient to show how closely the narrative of Polybius has been followed by Livy; and we may rely with confidence on the geographical details furnished by the latter, in this part of his work, being derived immediately and wholly from his Greek authority. Nowhere is this more conspicuous than in his relation of the campaign of the consul Cn. Manlius against the Galatians or Gauls then recently established in Phrygia, which is at once an interesting piece of military history, and a most valuable addition to our detailed geographical knowledge of the countries in question.[2] The same remark applies to the important geographical details, as well as the graphic descriptions of localities, found in the narrative of the wars of the Romans in Greece and Macedonia, as preserved to us by Livy. There can be no doubt that *all* these details—the value of which is acknowledged by all modern topographers—are derived directly from Polybius.[3]

§ 13. With regard to Africa—at least to the northern parts of that continent, bordering on the Mediterranean—there can be no doubt that Polybius possessed much more ample means of information than had been accessible to previous Greek geographers. The wars of the Romans with Carthage, and their alliance with the Numidian king Masinissa, had opened out the knowledge of regions and countries in this direction, which had been previously almost a sealed book to the Greek writers. There is little doubt that commercial jealousy excluded foreign traders from Carthaginian ports, with the

[2] See the remarks of Colonel Leake (*Asia Minor*, p. 145), who derived important assistance from this source in his able attempt to arrange the geography of Asia Minor with the very defective materials at his command.

[3] To the same source is undoubtedly owing the unusually detailed and graphic account by Plutarch of the defiles of the river Aous, where Flamininus defeated Philip V., king of Macedonia; though Plutarch has committed the strange mistake of confounding the Aous with the neighbouring river Apsus (Plut. *Flaminin.* c. 3; Leake's *Northern Greece*, vol. i. p. 389).

exception of the capital, and perhaps one or two other points: and the scanty information possessed by most Greek writers upon the extensive regions subject to the Carthaginian rule is a remarkable feature in all the earlier geographical treatises. But from the time of the Punic Wars the names of the Massylians, the Massæsylians, and the Maurusians or Mauretanians had become familiar to the Romans, and had doubtless reached the ears of the Greeks before they were introduced to them by Polybius.[4]

§ 14. But that historian not only possessed all the information that had thus become available to the Romans in general, but he had enjoyed special opportunities of surveying and examining in detail the coasts of Africa, having been appointed by his friend Scipio, during the Third Punic War, to the command of a squadron, with the express purpose of carrying on such investigations. In pursuance of this object he not only visited the Carthaginian coasts along the Mediterranean—which gave him occasion to describe the island of Meninx, near the Lesser Syrtis, and to enter into a detailed account of the Lotus-tree, and the manner in which it was employed as food[5]—but he extended his explorations beyond the Pillars of Hercules, and proceeded to a considerable distance along the western coast of Africa. Unfortunately the results of this last voyage—of which the narrative, had it been preserved to us in the original, would have been one of the most interesting and valuable contributions to our geographical knowledge—have been transmitted to us in a form so imperfect and obscure that they add almost nothing to the information we derive from other sources. The narrative of Polybius himself is utterly lost: and strange to say, no mention is found in Strabo of this remarkable voyage, which we

[4] Together with these familiar names we find mentioned by Polybius (iii. 33), a people called the Maccæi, a name unknown to later writers. The Macæ of Herodotus (iv. 175), called by Ptolemy (iv. 3, § 27) Macæi, who dwelt on the Great Syrtis, can hardly be the people meant.

[5] Polyb. xii. 2. See on this subject Barth, *Wanderungen*, pp. 259–265, and above, Chapter VIII. Note P.

know only from the notice of it in Pliny, who has cited from it a number of names and distances; but these are given in so confused a manner that it is impossible to arrange them in any intelligible order, or to arrive at any satisfactory conclusion concerning them.[6] We are unable even to discover to what distance his actual voyage extended, and what was the farthest point reached; but it seems probable that his own explorations did not proceed much, if at all, beyond Cape Noun (about 600 miles from Cape Spartel); and that the names of headlands, mountains, and rivers, which belong to more distant regions, and some of which we recognize from their occurrence in the voyage of Hanno, were derived from other authorities. The loss of this portion of the work of Polybius is the more to be regretted, as there is no doubt from all our knowledge of this careful and conscientious author that it was given in the original in a thoroughly trustworthy form: and would have thrown much light upon the earlier voyage of Hanno, as well as upon the geography of the western coast of Africa in the time of Polybius.

§ 15. With regard to the extension of Africa towards the south, he did not acquiesce in the opinion generally adopted in his time of its being surrounded by the Ocean; but distinctly tells us that with regard to the extreme parts of Ethiopia, where Asia and Africa joined, no one was able to say with certainty whether there was continuous land, or it was surrounded by the sea. The same doubt existed with regard to these regions as with respect to those in the extreme north of Europe.[7] He did not therefore adopt the theory of a circumfluous ocean, but was content (like Herodotus) to leave the matter in a state of doubt.

It is singular that Polybius, while in this instance refraining so carefully from any theoretical inference, should have adopted without hesitation a view suggested by some previous geographers, that the immediate neighbourhood of the equator

[6] Note B, p. 40. [7] Polyb. iii. 37.

was much less hot than the torrid zones on each side of it, so as to be habitable, and that it was in fact inhabited. This would appear to point to the existence of some dim and floating traditions of the populous and fertile regions of Soudan, south of the great desert of Sahara. But he appears to have based it principally upon some supposed astronomical causes. No mention is found in Strabo of such a theory as ascribed to Polybius,[8] and it was therefore probably not noticed in his history; but he is reported to have written a special treatise on the subject.[9]

§ 16. Although Polybius, writing as a historian and politician, would naturally give his attention rather to physical geography, and the natural boundaries and leading geographical features of countries, than to the more technical parts of the science, he yet seems to have rightly comprehended the necessity of laying down a correct map of the different countries with which he was concerned; and thus bestowed considerable pains upon the determination of distances, as well as the configuration of lands and seas. He is even cited by Pliny, together with Eratosthenes, as one of the most diligent inquirers into this branch of the subject.[1] But from the loss of that portion of his work, which contained a formal treatise on geography, the greater part of his statements of this description are lost to us. We however learn from Pliny that he reckoned the distance from the Strait of the Columns to Carthage at 1100 Roman miles (8800 stadia), and from thence to the Canopic mouth of the Nile at 1528 miles, or 12,224 stadia; while he estimated the total length of the Mediterranean from the Straits to Seleucia in Syria at 2440 miles or 19,520 stadia;[2] a calculation con-

[8] Strabo, however, elsewhere incidentally refers to such a view as being entertained by some of the earlier geographers (*καὶ γὰρ εἰ οἰκήσιμα ταῦτά ἐστιν, ὥσπερ οἴονταί τινες*, ii. 5, § 34, p. 195).

[9] *περὶ τῆς περὶ τὸν ἰσημερινὸν οἰκήσεως*, cited by Geminus, an astronomical writer of the first century B.C., *Elem. Astron.* c. 14.

[1] "Polybius et Eratosthenes, diligentissimi existimati." Plin. *H. N.* v. 6, § 40.

[2] Plin. *H. N.* vi. 33, § 206. This

siderably nearer to the truth than that of Eratosthenes; only falling short of the real length by about 500 stadia, while that of Eratosthenes exceeded it by more than ten times that amount.[3] On the other hand he materially underrated the width of the Mediterranean, asserting that its greatest breadth—which he erroneously conceived to be in a line due south from Narbo to the coast of Africa—did not exceed 3000 stadia.[4] In consequence of this error he had to bring down the coasts of Gaul and Liguria much too far to the south, and give a much narrower form to the Mediterranean, than had been supposed by Eratosthenes and his followers, who, as we have seen, placed Massilia almost exactly in its true position. He estimated the whole width of Europe from south to north,—from Italy to the Ocean, at 1150 miles; drawing his line, according to Pliny, through Lugdunum to the port of the Morini opposite to Britain.[5] But in this case, as in several

sum total was made up of the following details:—From the Straits in a straight line due east to Sicily he reckoned 1260 miles and a half,

thence to Crete . . .	375 miles	
„ Rhodes . .	183½	„
„ the Chelidonian Islands. .	the same distance,	
„ Cyprus . .	322 miles	
„ Seleucia . .	115½	„

Here the affectation of precision implied by the notice of half-miles (D passus) contrasts curiously with the absence of any indication of the particular points in the islands of Rhodes, Crete, and even Sicily, from which his measurement was taken. The introduction of Rhodes and the Chelidonian Islands between Crete and Cyprus, as if they all lay on the same parallel of latitude, is also a grave error.

[3] See Chapter XVI. p. 635.

[4] Polyb. ap. Strab. ii. 4. § 2, p. 105. The effect of this error was greatly enhanced by its being coupled with another, which was evidently held by Polybius in common with all his predecessors, that the line of the African coast, from the Straits to Carthage, lay much to the south of its true position; so that, according to his conception, the direct distance from the angle near Narbo to the point where a meridian line drawn from thence would intersect the parallel from the Straits of Gades to the Sicilian Strait, did not exceed 2000 stadia, while there remained 1000 more to the coast of Africa (Strabo, *l.c.*). But in point of fact the African coast, at the point opposite to the inmost bight of the Gulf of Narbo (which is near Montpellier), lies more than 50 G. miles (500 stadia) *to the north* of the parallel of 36°, which passes through the Straits of Gibraltar. Polybius therefore did not err so much in his estimate of the width of the Mediterranean at this point (which, however, really amounts to 6½ degrees of latitude or 3900 stadia), as in bringing down both the coast of Africa and that of Gaul far below their true position in latitude. Yet this error, which was the more inexcusable, as it was a departure from the more correct views previously entertained, was, as we shall hereafter see, not only adopted, but carried considerably farther by Strabo.

[5] Plin. *H. N.* iv. 22, § 121. "Polybius

others, we are left much in doubt from the loss of the original work, and the careless manner in which his statements are reported by Pliny and others. The whole distance *by sea* from the Straits of Gibraltar to the mouth of the Palus Mæotis he reckoned at 3437 miles, following the most direct course that was possible.

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latitudinem Europæ ab Italia ad Oceanum scripsit undecies centena et quinquaginta M. esse, etiam tum incomperta magnitudine ejus." Pliny adds that the true distance from the frontier of Italy at the Alps "per Lugdunum ad portum Morinorum Britannicum, qua videtur mensuram agere Polybius," was not less than 1318 miles, an enormous exaggeration, the origin of which we are unable to explain. The distance according to the Itineraries does not exceed 650 Roman miles.

The expression "portum Morinorum *Britannicum*" for the port from which men traded with Britain, is singular; but this probably belongs to Pliny and not to Polybius.

NOTE A, p. 22.

HANNIBAL'S PASSAGE OF THE ALPS.

IT is impossible within the limits of a note to attempt the discussion of the much disputed question of the passage of the Alps by Hannibal. The route which he followed, and the particular pass by which he crossed the mountains were a subject of doubt in the days of Livy, and have continued to be so down to our own time. But it may at least be asserted that the question has been brought within much narrower limits by the course of modern investigations. No one will any longer be found to maintain the claims either of the Great St. Bernard or the Mont Genèvre: though the former was adopted by Cluver, and the latter by D'Anville and Gibbon. The choice may be said to lie between the Little St. Bernard—the one supported by De Luc, and in a more elaborate form by Wickham and Cramer, as well as in the recent work of Mr. Law (*The Alps of Hannibal*, 2 vols. 8vo. Lond. 1866)—and the Mont Cenis, which was maintained by Ukert, and with a slight modification by Mr. Ellis (*Treatise on Hannibal's Passage of the Alps*, 8vo. Camb. 1854). I can here only state very briefly the reasons which appear to me decisive in favour of this latter hypothesis.

1. It is agreed on all hands that the question must be decided by the authority of Polybius alone: neither Livy nor any later writer having any clear understanding of the subject. Now it is certain that Polybius does not intimate that there was in his day any doubt about the matter: he describes the march in considerable detail, and notices the special natural features and obstacles which had any marked influence on its incidents, evidently assuming that these were well known. But Polybius (as we have seen in the text) was acquainted with only four passes across the Alps, and after mentioning the second of these, that *through the Taurini*, he added (as his words are reported to us by Strabo) "which was that by which Hannibal crossed" (εἶτα τὴν διὰ Ταυρίνων ἣν Ἀννίβας διῆλθεν, ap. Strab. iv. 6, p. 209). It is true that we only have this passage at second hand: and the advocates of the Little St. Bernard theory reject the words just cited, as being an addition of Strabo's. But no one (I think) reading the passage for the first time would

doubt their forming part of the statement derived from Polybius; and I may venture to add that a long familiarity with the mode in which Strabo cites his authorities, confirms the conviction in my own mind that they were so derived.

2. If the authority of Polybius be really as expressed in the above words, it appears to me almost decisive in favour of the Mont Cenis route. The only two that could reasonably be described as passing through the land of the Taurini, would be this, and that over the Mont Genèvre, which may safely be pronounced untenable, as not agreeing in detail with any of the circumstances recorded of the passage. This latter route, which was always described in later times as passing through the Cottian Alps, was well known and frequented by the Romans: but it appears to have been first followed, and as it were *discovered*, by Pompey when marching from Italy into Spain in B.C. 74, when, as he himself states in a letter to the senate, he opened out a route different from that of Hannibal, but more convenient for the Romans ("per eas [Alpes] iter, aliud atque Hannibal, nobis opportunius patefeci." Pompeii Epist. ap. Sallust. *Hist. Fr.* iii. 1). This new route was almost certainly the Mont Genèvre, which was in fact much the most direct line into the Roman province of Gaul and Spain: and for that reason the route of the Mont Cenis seems to have fallen into disuse after this time.

3. Without attaching too much importance to the dramatic incident of Hannibal's address to his soldiers, and pointing out to them the plains of Italy (Polyb. iii. 54), it is told by Polybius—the most unpoetical of historians—in a manner that has altogether the air of truth. Such a scene would readily find a place on the Mont Cenis, which descends directly into the broad valley of Susa and in full view of the plain of the Po: while there is no part of the Little St. Bernard from which anything else could be seen than the upper part of the valley of Aosta, nearly 50 miles from its opening into the plains.

4. The descent of the valley of Aosta, just referred to, appears to me to present an insuperable objection to the route by the Little St. Bernard. Polybius states distinctly that from the time when Hannibal had overcome the difficulties caused by the precipices and the steep slopes of snow—all of which must have occurred on the upper part of the pass—he descended in three days' march to the plains (iii. 56). But as Dr. Arnold, who first appears to have felt

the force of this difficulty, justly observes, no army could, according to any ordinary rate of marching, get in three days from the Little St. Bernard to the plains of Ivrea. (Arnold's *History of Rome*, vol. iii. p. 481.) The actual distance is not less than 64 English miles. But moreover the march would have lain for the whole way through the country of the Salassians, the most untameable of robbers, who rendered the passage of the valley insecure for an armed force, even in the days of Cæsar. (Strabo, iv. 6, § 7, p. 205.) Yet no allusion is found to any such difficulties, and though we learn from Strabo that Polybius was familiar with the name of the Salassians (see the passage quoted in the text) he has never once mentioned them in connection with Hannibal's passage of the Alps.

5. In comparison with these more general considerations, I am not inclined to lay much stress upon any of the details that are related concerning the march up the valley and the passage of the actual heights. The general character of the two valleys of the Isère and the Arc is much the same: and Dr. Arnold, who accepts, though with considerable reserve, the passage by the Little St. Bernard, at the same time remarks: "In some respects also I think Mont Cenis suits the description of the march better than any other pass." He adds also: "I lay no stress on the Roche Blanche; it did not strike me when I saw it as at all conspicuous": a remark in which all unprejudiced observers will concur. But moreover there is no reason to suppose that by the word λευκότερον Polybius meant to designate any remarkably white cliff, but simply one of those cliffs of bare white limestone so common both in the Alps and the Apennines. It is certainly used by him in this sense in the only other passage in which the word occurs. (Polyb. x. 30.)

6. In regard to the difficulties caused by the snow in descending from the summit of the pass (which are described in a very graphic and characteristic manner) these certainly seem to imply the existence of a greater amount of snow than is found at the present day either on the Mont Cenis or the Little St. Bernard. But the supposition that the snow-line descended in those days to a lower level than it does at present, is by no means improbable: and a very small fluctuation in this respect would produce a considerable change in either of the passes in question. The difference in their elevation is only about 400 feet.

7. But the new theory suggested by Mr. Ellis in 1853, that the route actually followed by Hannibal was the one now known as the Little Mont Cenis,—a lateral pass, which deviates from the high road about 7 miles below Lanslebourg, and rejoins it on the *plateau* at the summit—seems to meet several difficulties and agree with the details related by Polybius better than either of the alternative routes, while it of course possesses all the same advantages in the argument from general considerations as the well-known high road over the Mont Cenis. So far as it is possible to judge without personal examination of its details, this little known pass seems to meet all the requirements of the narrative of Polybius.

For the earlier literature of the subject I must refer my readers to the work of Ukert (*Geographie der Griechen u. Römer*, vol. ii. pt. ii. pp. 562–566). All the more recent theories have been fully discussed by Mr. Law, whose elaborate work has nevertheless done but little to advance our real knowledge.

NOTE B, p. 33.

WESTERN COAST OF AFRICA ACCORDING TO POLYBIUS.

It will be worth while to give the passage of Pliny at full. After relating the marvellous accounts of Mount Atlas, and alluding to the commentaries of Hanno, which he had evidently not himself seen, he continues:

"Scipione Æmiliano res in Africa gerente Polybius annalium conditor ab eo accepta classe scrutandi illius orbis gratia circumvectus prodidit a monte eo [Atlante] ad occasum versus saltus plenos feris, quos generat Africa; ad flumen Anatim CCCCLXXXV M. P.; ab eo Lixum CCV M. P., [Agrippa Lixum] a Gaditano freto CXII M. P. abesse; inde sinum qui vocatur Saguti, oppidum in promontorio Mulelacha; flumina Subur et Salat portum Rutubis a Lixo CCXIII M. P.; inde promontorium Solis, portum Risardir, Gætulos Autololes, flumen Cosenum, gentes Sclatitos et Masatos, flumen Masathal, flumen Darat in quo crocodilos gigni. Dein sinum DCXVI M. P. includi montis Baru promontorio excurrente in occasum, quod appellatur Surrentium; postea flumen Salsum, ultra

quod Æthiopas Perorsos, quorum a tergo Pharusios: iis jungi mediterraneos Gætulos Daras. At in ora Æthiopas Daratitas, flumen Bambotum crocodilis et hippopotamis refertum. Ab eo montes perpetuos usque ad eum quem Theon Ochema dicemus, inde ad promontorium Hesperium navigatione dierum ac noctium x; in medio eo spatio Atlantem locavit, ceteris omnibus in extremis Mauretaniæ proditum." (Lib. v. c. 1, §§ 9, 10, ed. Sillig.)

The slightest examination of the above extract will suffice to show the complete confusion in which it is involved. The greater part of the names are indeed otherwise unknown, but some are readily recognized, or may be identified with reasonable certainty. Thus there can be no doubt that Lixus is the well-known town of the name, which afterwards became a Roman colony, and occupied the site of the modern Al Araisch, but the distance given from the Fretum Gaditanum or Straits of Gibraltar is greatly in excess of the truth. Here the entirely different statement of Agrippa, so strangely intercalated in the midst of those of Polybius, is much more nearly correct, though still considerably in excess. The river Anatis is otherwise wholly unknown: and it is impossible to determine what point the author took as the commencement of his measurements. If the point where the ridge of Mount Atlas first descends to the sea be supposed to be designated by the words "ab eo monte," we must fix on Cape Ghir, which is about 400 E. miles (or 430 Roman) from Al Araisch: thus falling short of the distance given by more than 200 miles. Hence M. Vivien de St. Martin, who has analysed the passage of Pliny with great care, supposes Cape Noun to be meant, which may be considered as the last termination of the offshoots of the Atlas: but the point is not really susceptible of determination. Again the river Darat, in which crocodiles were found, must doubtless be the same with the Daradus of Ptolemy; which is still called the Draa, and is the largest river in this part of Africa. In like manner the Bambotus is in all probability the same as the large river mentioned by Hanno (under the name of Chretes) as abounding with crocodiles and hippopotami, and this, as we have seen, may probably be identified with the Senegal. The Theon Ochema also doubtless refers to the mountain of that name mentioned by Hanno: but it is quite uncertain what headland is designated by the Western Promontory (Hesperium Promontorium); and the statement that Polybius placed Mount Atlas in this part of Africa is entirely inexplic-

able, and seems wholly at variance with his previous statements concerning it.

If we attempt to apply the few points thus determined to the explanation of the rest of the passage, we shall find that they only serve to show more clearly the hopeless confusion in which the whole is involved. But one thing is clear: that the distances from the extremity of Atlas to Lixus and the Straits are given *from south to north*, while the names and details that follow are given in order of succession *from north to south*, though Pliny himself had evidently no idea of the difference. This has been clearly shown by M. Vivien de St. Martin, who has entered into an elaborate examination of the whole passage, and has thrown as much light on it as it is capable of receiving. (*Le Nord de l'Afrique dans l'Antiquité*, pp. 337–342.)

The probability is, that if we possessed the original narrative of Polybius, we should find it present as strong a contrast to the above confused and unintelligible statement, as does the authentic account of the voyage of Nearchus to the abstract of it given by Pliny. (See Chap. XIII. Note A, p. 542.)

It is remarkable that in this extract no mention is made of the island of Cerne, which confirms the inference, that the voyage of Polybius did not extend so far. But if we can depend on the accuracy of another passage of Pliny (vi. 31, § 199), Cerne *was* mentioned by Polybius, who placed it at the extremity of Mauretania, opposite to Mount Atlas, a description wholly at variance with its true position.

CHAPTER XVIII.

POLYBIUS TO POSIDONIUS.

SECTION 1.—*Progress of Roman conquests.*

§ 1. THE progress of geographical knowledge from the time of Polybius to that of Strabo was in great measure dependent on the progress of the Roman arms. As province after province, and kingdom after kingdom, were successively reduced under the all-absorbing dominion of the great republic, and tribes that had hitherto enjoyed a wild and lawless independence were brought under a regular administration, or compelled to acknowledge fixed boundaries, and render at least a nominal submission to their powerful neighbour, the regions they occupied became better known, and assumed a more definite character in the mind of the geographer. The materials for the construction of a map, or for that accurate geographical description of a country which is really impossible without a map, were still wanting; but the strong administrative turn of the Romans, as well as their habit of constructing high roads in all the newly acquired provinces of the empire, tended materially to promote the acquisition of a more distinct and detailed knowledge of the countries successively added to their dominions, while they were at the same time continually carrying their arms farther and farther among the semi-barbarous nations that encircled their frontiers.

Thus we find that after the time of Polybius the Romans gradually extended their conquests across the Alps into the southern parts of Gaul. Here the Salyans or Salluvians, a people of Ligurian origin, inhabiting the tract from the Var to the neighbourhood of Massilia, were the first to succumb to

the Roman arms. In B.C. 125 they were defeated by the consul M. Fulvius Flaccus; and two years later (B.C. 123) their subjugation was completed by the consul C. Sextius Calvinus, who established in their territory the Roman colony of Aquæ Sextiæ, which has retained to the present day the appellation of Aix.[1] The Vocontii, who adjoined them on the north, occupying the country between the Durance and the Isère, soon followed their example, while the Allobroges —a more powerful people, who held the mountain districts of Savoy and northern Dauphiné—were first defeated by Cn. Domitius in B.C. 122, and having again renewed the contest in the following year, with the support of their neighbours the Arverni, sustained an overwhelming defeat from the consul Q. Fabius Maximus, who assumed the surname of Allobrogicus in celebration of his victory.[2] The Allobroges were now reduced to the condition of subjects, but the Arverni were left in possession of their independence, which they retained to the time of Cæsar. Meanwhile the Romans secured a footing in Central Gaul by maintaining a steady alliance with the Ædui, who occupied the southern portions of Burgundy.

A few years later the Romans extended their dominion across the Rhone, and the foundation of the Roman colony of Narbo Martius (Narbonne), in B.C. 118, secured the possession of this part of the province.[3] Tolosa, the capital of the Tectosages, appears to have been at this time on terms of friendly alliance with Rome, but having afterwards joined the Teutones and Cimbri, on their irruption into Gaul, was taken and plundered by the consul Q. Servilius Cæpio in B.C. 106;[4] and from this time the Tectosages, as well as the more eastern tribe of the Volcæ, the Arecomici, became subject to Roman rule. The Roman province in Gaul had now become definitely organized, and had acquired the same limits which it retained to the time of Cæsar.

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[1] Livii Epit. lx. lxi.; Florus, iii. 2; Vell. Pat. i. 15.
[2] Livii Epit. lxi.; Florus, *l. c.*
[3] Vell. Pat. i. 15.
[4] Orosius, v. 15; Justin. xxxii. 3.

In Spain on the other hand the subjection of the Lusitanians after the death of Viriathus (B.C. 140), and the reduction of Numantia by Scipio Africanus, had already brought the greatest part of the peninsula under the Roman dominion at an earlier period; the wild tribes that inhabited the mountains in the north—the Cantabrians, the Asturians, and Gallicians—alone retaining their independence, which they preserved almost unimpaired till the time of Augustus.

§ 2. The Dalmatians, on the east coast of the Adriatic, were defeated and reduced at least to nominal submission by L. Metellus in B.C. 119; the Iapydes or Iapodes, also an Illyrian people, situated in the modern Croatia, had been already defeated by the consul Sempronius Tuditanus ten years before (B.C. 129); neither people however became really subject to the Romans before the time of Augustus. The Scordiscans, who are called by some Roman writers a Thracian people, but were more probably a Celtic race, settled at this time in the south of Pannonia,[5] first came in contact with the Roman arms as early as B.C. 175; and again in B.C. 135; but they attracted little attention till B.C. 114, when they inflicted a severe blow on the Roman arms, having defeated the consul C. Porcius Cato and destroyed his whole army; after which they extended their ravages over the whole of Macedonia and Thessaly, until they were first checked by T. Didius, and ultimately driven across the Danube by the consul M. Livius Drusus in B.C. 112.[6] We however find them again mentioned a few years afterwards, in conjunction with the Triballi—an old name that here reappears after a long interval—as carrying on hostilities within the limits of Thrace.[7] The wild tribes that inhabited that country were indeed still unsubdued, and continued for more than a century afterwards to trouble the Roman governors of Macedonia, or give them occasion to distinguish themselves by military successes. But C. Scribonius

[5] Concerning these Celtic tribes in Pannonia and the neighbouring regions, See Sect. 6, Note E, p. 105.

[6] Liv. Epit. lxiii.; Eutrop. iv. 24.

[7] Eutrop. iv. 27.

Curio in B.C. 75 appears to have been the first Roman general that penetrated to the banks of the Danube.[8]

§ 3. While the Romans were thus extending the limits of geographical knowledge in Europe, they had as yet made no progress in Asia beyond the regions already well known to the Greeks. Nor had the latter been able on their side to contribute any important additions to the knowledge already available in the time of Eratosthenes and his immediate successors. In this direction indeed the course of events had been decidedly unfavourable to the advance of geographical science. That Hellenization of a large part of Asia, which had followed so rapidly upon the conquests of Alexander that it had appeared likely at one time to include the whole continent from the Mediterranean to the Indus within the domain of Greek knowledge and civilization, had met with a severe check from the disruption of the Seleucidan empire through the revolt of the upper provinces. The kings of Bactria, Ariana, and the provinces adjoining the Indus, were indeed all of Greek origin,[9] and probably did their best to maintain and encourage the surviving remains of Greek civilization within their dominions. Nor can it be doubted that if they had retained unbroken connection with the more westerly provinces of the Syrian monarchy, they would have been the means of materially extending the knowledge possessed by the Greeks of these regions of Upper Asia, and even of India itself. It appears certain that Menander, a Greek monarch who reigned in the regions of the Paropamisus (apparently about 160–140 B.C.),[1] had not only established his dominion over the whole of the Punjab, and perhaps the lower valley of the Indus also, but had carried his arms beyond the Hyphasis—the limit of Alexander's conquests—as far as the

[8] Eutrop. vi. 2.

[9] This is evident from the purely Greek character of their names, as found on their coins, and which include such well-known names as Lysias, Diomedes, Menander, Plato, Demetrius, &c.

[1] The date here given is that assigned to the reign of Menander by General Cunningham; but it must be confessed that this, in common with almost all the other dates of the Bactrian kings, is in great measure conjectural.

banks of the Jumna, if not even farther.[2] The extensive trade carried on by these Greek rulers with the adjoining regions of India is confirmed by the curious fact that more than two centuries later the silver coins of Menander and Apollodotus—another monarch of pure Greek extraction—still formed the ordinary currency at Barygaza and other Indian ports.[3] To the discovery of these and similar coins in our own days we are indebted for reviving our knowledge of the extent and long duration of this detached fragment of the Hellenic world, concerning which we find but few and scattered notices in the extant historians.[4]

§ 4. It was unfortunate that the rise of the Parthian monarchy, almost simultaneously with that of the Græco-Bactrian kings, and its rapid extension over the provinces of the table-land of Iran, until it absorbed the fertile regions on the banks of the Euphrates and the Tigris,[5] had the effect of entirely cutting off the more distant Greek settlements from the Hellenized regions of Syria and Asia Minor. Hence doubtless arose the very imperfect knowledge apparently possessed by Greek writers of these outlying districts, where a certain amount of Greek civilization still lingered; and the absolute want of any additional geographical information derived from this source.[6]

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[2] Strabo, xi. p. 516. According to his statement (apparently derived from Apollodorus of Artemita) Menander crossed the Hypanis, by which he evidently means the Hyphasis, and advanced as far as the Isamus. Unfortunately the last name is unknown, and its identification with the Iomanes or Jumna is merely conjectural.

[3] This fact is stated by the anonymous author of the Periplus of the Erythræan Sea (§ 47). That curious document will be fully examined in a future chapter.

[4] See Note A, p. 102.

[5] The reduction of Babylonia and the adjacent provinces by Mithridates I., king of Parthia (Arsaces VI.), was completed, according to Professor Rawlinson, before B.C. 150 (Rawlinson's *Sixth Oriental Monarchy*, p. 77).

[6] It is singular that Strabo speaks of the extension of the Parthian monarchy as one of the sources of increased geographical knowledge in his day (ii. 5, p. 118). Its real effect appears to have been precisely the contrary.

SECTION 2.—*Greek Writers.*

§ 1. But though the Greeks can hardly be said to have made any positive contributions to the extension of geographical knowledge during this period, there were several writers on geographical subjects, whose names merit a passing notice, and some of them at least possess the more importance in our eyes from the preservation of portions of their works down to modern times. Perhaps the first in order of time among these—though his age is not exactly known—was APOLLODORUS, a grammarian of Alexandria,[7] and a voluminous writer upon various subjects, of which however the only one that has been preserved to us is his well-known mythological treatise. He was also the author of a commentary on the Catalogue of the Ships in the Iliad, in twelve books: a work which appears to have been in part of a geographical character—as it could not indeed well avoid—but mixed with much matter of a historical or mythological description. Our knowledge of it is derived almost entirely from Strabo, who repeatedly refers to it by name, though more often to censure than to praise; but there can be no doubt that he made extensive use of it, where he does not acknowledge his obligation—a large part of his own work being occupied with discussions and examinations of the Homeric Catalogue, similar to those which must have constituted the bulk of his predecessor's treatise.

In regard to the general principles which he applied to the investigation of the Homeric geography Apollodorus showed a sounder judgement than Strabo is willing to allow, having adopted the same view with Eratosthenes, that Homer, while showing an accurate and minute knowledge of the geography, and even the topography, of Greece itself, and the neighbour-

[7] Apollodorus was a native of Athens, but he studied under the celebrated grammarian Aristarchus, and may, therefore, be regarded as belonging to the Alexandrian school. His age cannot be determined with accuracy, but his great chronological work—composed, like his Γῆς περίοδος, in iambic verse—ended with the year 145 B.C., and was dedicated to Attalus II. Philadelphus, king of Pergamus, who died in 138 B.C. (See Clinton's *F. H.* vol. iii. pp. 105, 119.)

hood of Troy, was almost wholly ignorant of the more distant regions of the world;[8] and that it was idle to bring to the test of geographical accuracy such passages as those concerning the Ethiopians or the wanderings of Menelaus. He rejected also the commonly received identification of many of the localities mentioned in the Odyssey, such as that of Gaulos with the island of Calypso, and Scheria with Corcyra; and considered that the poet had intentionally transferred the wanderings of Ulysses to the shores of the unknown Ocean, in order that he might be at liberty to indulge in poetic fictions without restraint.[9] But besides this work, which we find frequently cited, and which appears to have become a kind of standard authority on the subject, Apollodorus also composed a formal geographical treatise, in iambic verse, to which he gave the name of Γῆς περίοδος.[1] It contained a regular description of the three continents,[2] and was probably in many respects similar to the poetic treatise ascribed to Scymnus Chius, to which we shall have occasion to revert hereafter: but we have very little information concerning it: the citations in Stephanus of Byzantium, though numerous, being confined almost entirely to mere names.

§ 2. Nearly contemporary with Apollodorus was DEMETRIUS OF SCEPSIS,[3] who wrote an elaborate treatise, in not less than thirty books,[4] upon the catalogue of the Trojan allies, as preserved in the Iliad. This is frequently referred to by Strabo, and evidently contained a considerable amount of geographical information, though the greater part of so voluminous a work must have been occupied with historical and mytho-

[8] Strabo, vii. p. 298.
[9] Ib. p. 44, vii. 3, § 6, pp. 298, 299.
[1] Strabo, xiv. p. 677.
[2] See the fragments of it collected by C. Müller in his *Fragmenta Historicorum Græcorum*, vol. i. p. 449.
[3] According to Strabo (xiii. 1, § 55), Demetrius was a contemporary of Crates and Aristarchus, which would make him somewhat senior to Apollodorus. He was a boy, or quite a youth (μειρακίον), at the time when the Romans first crossed over into Asia, B.C. 190 (Id. xiii. 1, § 27). His work was probably not composed till long afterwards. But it would appear to have been published *before* that of Apollodorus, who is said to have borrowed largely from him (Strabo, viii. p. 339).
[4] Strabo, xiii. 1, p. 603.

logical disquisitions.[5] Its principal interest in modern times arises from the author having been the first to raise doubts as to the true site of the Homeric Ilium: a question upon which, as Strabo observes, the circumstance of his birth-place having been situated within a few miles of the localities, as well as the pains he had bestowed upon the subject, entitled him to much consideration. Hence his views were adopted by Strabo, and have received the assent of many scholars in modern times, so far at least as relates to the rejection of the claims of the Ilium of his day to represent the Homeric city.[6] In his general views on Homeric geography, and the extent of the poet's knowledge, Demetrius appears to have agreed with Eratosthenes and Apollodorus, and consequently incurred the censure of Strabo for a want of due reverence for the poet's authority. In particular he denied that Homer had any knowledge at all of the voyage of Jason *to the Phasis*:[7] a conclusion in which most modern critics would agree with him.

§ 3. A writer whose works had much more important bearing upon geography, properly so called, was AGATHARCHIDES, a native of Cnidus, who was the author of several historical and geographical treatises of considerable interest, known to us chiefly from their mention by Photius. Among these we find included a history of the affairs of Asia in ten books, and of those of Europe in not less than forty-nine: besides which he composed a separate treatise in five books concerning the Red

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[5] This is apparent from the passages cited, the greater part of which refer to subjects of this class. But from some of those quoted by Strabo it is evident also that he went fully into topographical details (see the references to his work collected by Clinton, *F. H.* vol. iii. p. 527, note; and by C. Müller, in a note to his *Fragm. Hist. Græc.* vol. iv. p. 382). It is indeed almost certain that the full topographical account of the Troad, given by Strabo in his great work (xiii. c. 1), was derived principally, if not entirely, from Demetrius.

[6] Hardly any modern writer has indeed adopted the view of Demetrius in identifying the Ἰλιέων κώμη with the heroic Ilium; but the theory of M. Chevallier, placing the site above Bunarbashi, would scarcely have been so hastily embraced in recent times, had not the scepticism of Demetrius and Strabo shaken the traditional faith in the *historic* site.

[7] ἀρχὴν φησι μηδ' εἰδέναι τὴν εἰς Φᾶσιν ἀποδημίαν τοῦ Ἰάσονος Ὁμηρον. Strabo, i. 2, § 38, p. 45.

Sea and the nations adjoining it.[8] How far the first two works were of a historical and how far of a geographical character we are unable to determine with certainty, very few fragments having been preserved to us; but Photius has fortunately transmitted to us an abstract of two whole books of the treatise on the Red Sea, from which we learn also that the account of the countries and nations adjoining it, which we find in Diodorus, is derived entirely from the same source: and the two abridgements thus serve to supplement one another. Agatharchides (as we learn from Photius) passed the latter years of his life at Alexandria, where he enjoyed the important position of tutor to the young king, Ptolemy Soter II. (about 116 B.C.),[9] and he had thus every opportunity of acquiring the most authentic information concerning the regions in question. Of these he seems to have availed himself with diligence and judgement; and the fragments of his work, notwithstanding the imperfect form in which they have been transmitted to us, are undoubtedly among the most valuable of the minor geographical writings that remain from antiquity.[1]

§ 4. The few extracts that are preserved from the first book relate only to the capture of elephants and the arrangements made for that purpose by the Ptolemies, and to a mythological discussion, of very little interest, concerning the origin of the name of the Erythræan Sea. Of the contents of the second, third, and fourth books we have no information, but they apparently contained an account of the Ethiopians, properly so called, from which it is probable that the interesting account

[8] Photius, *Biblioth.* cod. 213, p. 171, ed. Bekker. The abstracts of the two books περὶ τῆς ἐρυθρᾶς θαλάσσης are given in cod. 250, pp. 441–460.

[9] For the date, and the determination of the Ptolemy to whom he thus acted as tutor, upon which the whole chronology of his life depends, see the elaborate investigation by C. Müller in his edition of the *Geographi Græci Minores*, tom. i. Prolegomena, pp. liv–lviii.

[1] They are published (from the extracts given by Photius) in Hudson's edition of the *Geographi Græci Minores*, vol. i.; but by far the best edition is that given by C. Müller (*Geogr. Græci Minores*, tom. i.), who has printed the extracts as given by Diodorus parallel with those given by Photius, so that the reader can at once compare the two; and has added also some valuable notes.

of their manners and customs, which we find in Diodorus, was for the most part derived.[2] But it is with the beginning of the fifth book that the really valuable portion of our extracts commences. After giving a very curious and interesting account of the gold mines, which were still worked in his day on the borders of Egypt and Ethiopia, near the Red Sea,[3] he proceeded to describe the habits and manner of life of the Ichthyophagi, a tribe occupying the western shores of the Red Sea, and who were, as he justly remarks, identical in these respects with similar tribes that extended along the coasts of Arabia, Carmania and Gedrosia to the frontiers of India. These Ichthyophagi were, as he describes them, a race in the lowest state of civilization; living wholly upon fish, but not possessing boats, or even nets, with which to catch them, and dependent therefore upon what were left upon the shore by the receding tide. They went entirely naked, and had their wives and children in common: they were said to possess no idea of good and evil, and to show a remarkable apathy and indifference to danger or pain. It was said also that they drank only every fifth day, when they repaired to the few sources of water that were to be found at the foot of the nearest mountains: and some tribes were even reported never to drink at all. Some of them dwelt in caves, others formed rude huts with the bones of the largest fishes, covered with sea-weed: and others again formed holes or dens in the great masses of sea-weed that were accumulated on the shore during heavy gales.[4]

In connection with these Ichthyophagi he mentioned another tribe, to whom the Greeks gave the name of Chelonophagi, from their subsisting almost entirely upon the turtles which

[2] Diodor. iii. c. 2–10. We cannot, however, assume that this account is wholly taken from Agatharchides, as Diodorus claims to have derived his information in part from Artemidorus, and also to have had personal intercourse with Ethiopian deputies during the time of his stay in Egypt (Ib. c. ii.).

[3] Agatharchid. § 23–29, ed. Müller; Diodor. iii. 12–14. These gold mines were situated in the mountains near Cosseir, now occupied by the Ababdeh Arabs; but they have long ceased to be worked.

[4] Agatharch. §§ 31–46; Diodor. iii. 15–20.

abounded in these seas: the shells of which also served them by way of roofs under which to shelter themselves, as well as occasionally as boats with which to cross the sea, for short distances.[5] This tribe however did not dwell near the shores of the Red Sea, but inhabited a group of small islands, adjoining the coasts of Carmania and Gedrosia, which fronted the Indian Ocean.

§ 5. Agatharchides next proceeded to describe the various tribes of Ethiopians that dwelt inland, beyond the regions occupied by the comparatively civilized race that held the island of Meroë and the district immediately south of Egypt. Here he first mentioned the Rhizophagi (Root-eaters), who dwelt on the banks of the Astaboras (Atbara) above its confluence with the Nile, and subsisted, as their Greek name implied, mainly on the roots of reeds and other water plants growing in the marshes.[6] Adjoining these were the tribes called Hylophagi and Spermatophagi, who fed not only on the fruits, but even devoured the leaves and young shoots of trees, which they climbed for this purpose with incredible agility.[7] Next to these came the Hunters (Cynegetæ, called by other writers Gymnetes), who inhabited a region abounding in wild beasts, so that they were compelled always to sleep in trees. They were excellent archers, and were thus able to slay even wild cattle, panthers, and other formidable wild beasts, for which they lay in wait as they quitted their watering-places.[8] Again to the west of these were the race distinguished as Elephantomachi or Elephantophagi, from their subsisting almost entirely on the flesh of the elephants which they killed, with no other weapon than a sharp axe, with which they hamstrung the huge beasts. So devoted were they to this pursuit that Ptolemy had in vain endeavoured to induce them to abandon it, in order to assist his hunters in taking the elephants alive.[9]

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[5] Agatharch. § 47; Diodor. iii. 21.
[6] Agatharch. § 50; Diodor. iii. 23.
[7] Agatharch. § 51; Diodor. iii. 24.
[8] Id. § 52; Diod. iii. 25.
[9] Ib. § 53–56; Diod. 26.

Beyond these to the west were a race of Ethiopians called Simi (flat-nosed) and towards the south were a people called the Struthophagi (ostrich-eaters), from the ostriches which abounded in their country, the chase of which supplied them with their principal means of subsistence.[1] Not far from these were the Acridophagi or Locust-eaters, a very black people, who supported themselves to a great degree upon the swarms of locusts that periodically visited their country.[2] An adjoining region, though fertile and abounding in pastures, was said to be uninhabited on account of the multitude of scorpions and large spiders with which it swarmed.[3] The remotest people of all towards the south were the so-called Cynamolgi or Canimulgi, a very barbarous race, but who kept numbers of large dogs with which they hunted down the wild cattle that roamed in vast herds over their territory.[4]

§ 6. The geographical position of these races is in general very obscurely indicated, and was probably but imperfectly known to Agatharchides himself; and the names by which they are described were obviously of Greek invention, not native appellations.[5] But the notices of their manners and habits are very curious, and have been to a great extent confirmed by the observations of modern travellers—Bruce, Burckhardt, and others; though it is probable that they never were so strongly characteristic of different tribes as they were regarded by the Greek geographers. The same statements were copied by Artemidorus, and from him again by Strabo, and are repeated by Pliny, Ælian and other later writers. In fact it appears probable that the work of Agatharchides was the original source of all the information possessed concerning the Ethiopian tribes of the interior by either Greek or Roman writers down to a late period.

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[1] Agatharch. § 57: Diod. iii. 28.
[2] Id. § 58; Diod. iii. 29.
[3] Id. § 59; Diod. iii. 30.
[4] Id. § 60; Diod. iii. 31.
[5] Some of these are again found at a later period in Ptolemy, who has of course given them a more definite position, but it is very doubtful how far we can rely upon the names given to such fluctuating and barbarous tribes being applied to the same people at so long an interval.

He was also the first to recount many curious particulars concerning the wild animals that were found in these remote regions, and with which the hunting expeditions of the Ptolemies had brought the Greeks of Alexandria into acquaintance. Thus he described the camelopard, the ostrich, the rhinoceros, and several species of apes or baboons, to which he gave the name of Cynocephali, Cepi and Sphinxes; the Crocottas or laughing hyæna, and the wild bulls, which he erroneously supposed to be carnivorous, but justly described as animals of terrible ferocity.[6] After speaking of the huge serpents with which these countries were said to abound he gave a very curious account of one which had been captured and brought alive to Alexandria, where he had himself seen it, and which was thirty cubits in length.[7]

It is remarkable that among all these notices of the remote Ethiopian tribes we find no trace of the supposed abundance of gold among them which bears so conspicuous a part in the fables current concerning them in the time of Herodotus; an omission the more singular because gold is really found in considerable quantities in the neighbourhood of the Upper Nile, and gold mines were actually opened under Mehemet Ali at a place called Fazoglo in Sennaar.[8] Nor do the old fables concerning the Pygmies, the men with huge ears, and other similar tales appear to have found a place in the pages of Agatharchides. The extension of more accurate information was gradually displacing all such fictitious creations; it was found at least that they did not exist in Ethiopia.

§ 7. Returning from these remote regions towards the north, and the countries bordering on the Red Sea, Agatharchides next proceeded to describe the Troglodytæ, a people inhabiting the mountain ranges that border the Red Sea on the west, at more or less distance from the coast, throughout almost its

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[6] Agatharch. § 76; Diod. iii. 35.

[7] Agatharch. § 78; Diodor. iii. 36, 37.

[8] As usually happens, however, it was found that the reality fell far short of the rumours current concerning them; and they were soon abandoned.

whole length.[9] Though less barbarous than the Ichthyophagi of the coasts, the Troglodytes were still in a very rude condition; they dwelt principally in caves,—from whence their name—went almost naked, and had their wives in common; but they had extensive flocks and herds, of which they drank the milk and blood, as well as consumed the flesh. It was their custom to put to death the aged and infirm, as well as those afflicted by any protracted disease. Their habits of life were doubtless determined in great measure by local conditions; and those of the mountain tribes who inhabit the same ranges at the present time are still very little removed from barbarism. But ancient writers were chiefly impressed with their habit of dwelling in caves, and hence applied the name of Troglodytes to the people adjoining the western shores of the Red Sea from the frontiers of Egypt to the Straits of Bab-el-Mandeb.

After this general description of the habits of the Troglodytes Agatharchides appears to have given in some detail a more particular account of the western coast of the Red Sea or the Troglodytic coast, as it was generally termed, not, however,—so far as we can judge from our existing abstracts—giving a regular Periplus or enumeration of the ports, islands and headlands, but merely noticing the more interesting and striking natural phenomena. Thus he mentioned the hot springs near Arsinoë; the Scarlet Mountain near Myos Hormus,[1] the extensive bay called Foul Bay (κόλπος Ἀκάθαρτος) from the rocks and shoals with which it abounded, and the island of Topazes, celebrated for the gems of that name;[2] but did not even notice the important port of Berenice in the same neighbourhood. From thence to Ptolemaïs Epitheras (the great hunting-station of the Ptolemies) the sea

[9] Agatharch. §§ 61-63; Diodor. iii. 32, 33.

[1] Concerning the position of this celebrated port, and the bright red mountains that serve to identify it (ὄρος μιλτώδες), see Note A, Chapter XV. p. 607.

[2] Agatharch. §§ 81, 82; Diod. iii. 39.

was said to be very shallow and abounding in sea-weed and sand-banks, so as to be very difficult of navigation for the large ships that were required for the transport of the elephants. But beyond Ptolemaïs the coast trended towards the east, while the sea became deep and open, and presented no difficulties to the navigator, though abounding in huge fish and sea monsters of various kinds. The adjoining tracts were traversed by rivers, which took their rise in the Psebœan mountains[3]—a name by which the author must have meant to designate the mountains of Abyssinia, though he applies the same name to the promontories that close in the mouth of the gulf, and form the Straits of Bab-el-Mandeb.[4] It is singular that he appears to have given no particulars concerning these straits, or the cinnamon and spice producing lands beyond them.

§ 8. Instead of this he returned (according to our existing abstracts) to the head of the Gulf of Heroöpolis or the inmost bight of the Red Sea, and proceeded to describe in considerable detail the Arabian coast of that sea.[5] Many of the points mentioned may be recognized without difficulty, though his description, at least as transmitted to us, is unaccompanied with any statement of distances. Thus the spot named Phœnicon, or the palm-grove, on the Gulf of Heroöpolis, may be safely identified with the modern Tor, still famous for its groves of palm-trees; the headland that separates the Gulfs of Suez and Akabah (now called Ras Mahomed) with the small island lying off it, called by the Greeks the Island of Seals, are clearly described; the barren and precipitous rocks that bound the coast for a considerable distance in one part, the swarm of small islands in another, and the marshy and wooded tract that succeeds, are found well to agree with the observations of modern voyagers.[6] The names of the different

[3] Agatharch. § 84; Diodor. iii. 41.
[4] Diod. ibid.
[5] Agatharch. §§ 85–94; Diodor. iii. 42–45.
[6] Agatharchid. §§ 85–94; Diodor. iii. 42–44. The same particulars are repeated from Artemidorus by Strabo, xvi. 4, § 18.

Arabian tribes are of comparatively little interest, though that of the Thamudeni is still to be traced in the modern Thamud, a tribe dwelling in the northern part of the Hedjaz. The Debæ, who dwelt along the coast in the southern portion of the same region, were noted for their extensive herds of camels, their territory was said also to abound in gold, which was found also in great quantities in that of the Gasandæ or Gasandenses, further towards the south.[7] No gold is now known to exist in these regions.

§ 9. South of these tribes, occupying the south-western corner of Arabia, were situated the Sabæans, a nation of a very different character. It is especially to Agatharchides that we are indebted for the glowing descriptions of the wealth and prosperity of this people, which gave origin to the name of Arabia Felix applied to this portion of the peninsula, and which continued to be repeated by Greek and Roman writers down to a late period.[8] The territory of Yemen is indeed naturally the most fertile part of Arabia, but it was the extraordinary abundance of spices that constituted the great wealth of the country. Such was the quantity of these that we are told the inhabitants were debilitated by the excess of fragrant odours, and compelled to burn bitumen and goats' beards in order to counteract their influence (!). The sea-coast produced balsam, cassia, and another fragrant plant, which was not exported, as its perfume did not last; in the interior were *forests* of frankincense, myrrh, cinnamon and other odoriferous trees, mixed with palms and tall reeds.[9] But besides the spices thus produced in their own country, they imported them in large quantities from the opposite coast of Africa (the Regio Cinnamomifera),[1] and again exported them to the surround-

[7] Agatharchid. §§ 92–96; Diod. iii. 45.

[8] Id. §§ 97–102: ap. Diod. cc. 46, 47; Artemidor. ap. Strab. xvi. 4, § 19; Plin. *H. N.*

[9] These forests were said to swarm with serpents of very small size, but whose bite was deadly (Ib. § 98). They are probably the same as the "winged serpents" described by Herodotus (iii. 108) as abounding in these regions, and interfering with the gathering of frankincense.

[1] It is remarkable that they are described as traversing the sea which separated them from this part of Africa

ing nations. The great wealth of the country was in fact derived mainly from their trade in these commodities, which was considered as the most lucrative known, and having been carried on by the Sabæans for centuries past had been the means of accumulating enormous quantities of gold and silver in the country. Hence they had magnificent palaces, resplendent with gold, silver, and precious stones; they drank from goblets of gold, studded with gems, and even their seats and couches were overlaid with silver. Their capital city was called by Agatharchides Saba, but it appears, as we learn from Artemidorus, to have also borne the name of Mariaba, which is still retained in the modern name of Mareb, the ruins of which are still extant about 80 miles E. of the present capital of Yemen.[2]

§ 10. Besides this trade their ports on the Indian Ocean were the resort of numerous ships from the neighbouring countries to the east, as far as the Persian Gulf, together with many traders from the mouths of the Indus:[3] and they thus became the principal *entrepôt* of the trade with India. We have already seen that it was probably through this channel that the Alexandrian merchants obtained their Indian commodities. The stories concerning the wealth of the Sabæans, as well as others concerning their luxurious habits of life, are evidently gross exaggerations, but there is no doubt that the country was really at this time the seat of an extensive and flourishing commerce, which was carried on partly by sea, but to a considerable extent also by land caravans passing through the territory of the Minnæans (the Hedjaz) to the city of Petra, which had already become a great emporium for the trade from all parts of Arabia.[4] Thither also repaired caravans from

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in vessels made of hides (δερματίνοις πλοίοις), apparently similar to those in use among the Britons.

[2] Artemidorus ap. Strab. xvi. 4, § 19.

[3] Agatharchid. § 103. These traders are described as coming "from the place where Alexander founded a naval station by the river Indus." The name is given in Diodorus (c. 47) as *Potana:* probably Pattala is meant, though that place was not really founded by Alexander.

[4] Agatharchid. § 87; Diodor. iii. 42.

Gerrha, which had become the chief emporium on the east side of Arabia, so that its inhabitants were said to rival the Sabæans in opulence.[5]

No geographical indications are preserved by Agatharchides (to judge from our existing extracts), of the *outer* coast of Arabia, bordering on the Indian Ocean, and the vague notice of certain islands to the south, of great fertility which may possibly refer to Socotora and the neighbouring islets, is of the most indefinite character. But it seems probable that an allusion at the end of his work[6] to some islands recently discovered in this part of the world must refer to those just mentioned. His account of the astronomical phenomena observed in these southern regions is in great part inaccurate and absurd, and can only have been gathered from ignorant navigators, who did not themselves understand the phenomena which they reported.[7]

Upon the much controverted question of the cause of the inundations of the Nile, Agatharchides entertained sound views, attributing them to heavy and continuous rains taking place in the mountains of Ethiopia, from the summer solstice to the autumnal equinox; a fact which was attested, as he observes, by the natives of the neighbouring regions.[8]

§ 11. One other passage of Agatharchides[9] deserves notice from the light it incidentally throws upon the navigation of his day. After pointing out the contrast between the Ethiopians in the south, and the Scythians in the north, resulting from the extremes of climate in the two cases, he adds that, after all, the intervals which separate these extremes are not so very great. For that many persons sailing with vessels carrying cargoes, and having a favourable wind, would reach Rhodes in ten days, from the Palus Mæotis: from thence it was only four days' sail to Alexandria, and ten days' voyage up

[5] Agatharch. §§ 87, 102.
[6] Id. § 110.
[7] Id. § 104; Diod. iii. 48. But we have seen that the same thing was the case to a considerable extent even with the accounts given by Onesicritus and Nearchus as they have been transmitted to us.
[8] Id. § 112.
[9] Agatharch. § 66; Diod. iii. 34.

the Nile from thence would suffice in many cases to reach the confines of Ethiopia. So that a continuous voyage of twenty-four days was sufficient to pass from the coldest regions of the world to the hottest.* The shortness of the time here allowed for the ascent of the Nile is remarkable, and could certainly only apply to very exceptional cases. But the statement concerning the time in which the voyage was *frequently* made from the Palus Mæotis to Alexandria is curious and instructive.

SECTION 3.—*Artemidorus.*

§ 1. Nearly contemporary with Agatharchides was ARTEMIDORUS, a native of Ephesus, but who, like most of his contemporaries, studied and wrote at Alexandria. We are told that he flourished in the 169th Olympiad (B.C. 104–101[1]), and it is certain that his geographical work was not published until after that of Agatharchides, of which he made great use. His principal work was a general treatise on geography, in which, however, special attention was devoted to the countries bordering on the Mediterranean and Euxine Seas, of which it contained a full and detailed Periplus.[2] Artemidorus himself had examined a large part of the shores of the Mediterranean, and had even visited Gades and the Sacred Promontory, which he described from personal inspection.[3] In regard to the west of Europe generally he appears to have collected much valuable information, and is frequently cited by Strabo as correcting

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[1] This is the statement of his epitomizer Marcian of Heraclea. *Ἀρτεμίδωρος δὲ ὁ Ἐφέσιος γεώγραφος κατὰ τὴν ἑκατοστὴν ἐξηκοστὴν ἐννάτην Ὀλυμπιάδα γεγονώς*, p. 65, ed. Hudson.

[2] Marcianus of Heraclea, who had composed an epitome of his work, speaks of it as if it were only a Periplus of the Mediterranean, though extending to eleven books. But it is certain that it contained a description of other regions besides. Stephanus of Byzantium cites his statements concerning Taprobane, which were found in his ninth book (s. v. *Ταπροβάνη*).

[3] Id. ibid. pp. 64, 65; Strabo, iii. p. 137. He correctly stated that the Sacred Promontory (Cape St. Vincent), which was placed by Eratosthenes at five days' voyage from Gades, was not in reality distant from that city more than 1700 stadia (Strabo, iii. p. 148).

the errors of earlier writers, such as Timæus and Eratosthenes, though he fell into others in his turn.[4] Throughout his work indeed Strabo appears to have made use of Artemidorus as one of his principal authorities: but as usual he only cites him in peculiar and exceptional cases, where he has occasion either to censure his statements, or refer to them as superseding those of his predecessors. In the absence of the original work it is impossible for us to judge of the advance really made by Artemidorus in the knowledge of Western Europe, as compared with Polybius on the one hand, and with his successor Posidonius on the other. But it is probable that he still possessed very imperfect information concerning the external, or Atlantic shores of Spain and Gaul, as well as still more of Britain. Marcianus of Heraclea, a late writer, describes Artemidorus as a very valuable authority for the geography of the Mediterranean, his Periplus of which he regarded as so accurate that he himself composed an abridgement of it.[5] But his knowledge of the external ocean, both towards the west and the east, is justly regarded by the same authority as very vague and confused. With regard to the Red Sea indeed and the nations adjoining the Indian Ocean, as well as the Ethiopian tribes of the interior, Artemidorus seems to have done little more than copy Agatharchidès, his account of them, which has been preserved to us by Strabo,[6] being in great part taken almost word for word from the earlier writer. He, how-

[4] Strabo, iii. pp. 137, 148, 159; iv. pp. 183, 185, 198.

[5] A fragment supposed to have formed part of this abridgement will be found in Hudson's *Geographi Græci Minores*, tom. i. pp. 60–74, and is included in the valuable edition by M. Miller of the works of Marcianus of Heraclea and some other minor geographers (8vo. Paris, 1839), as well as in the collection of the *Geographi Græci Minores* by C. Müller (tom. i. pp. 563–572). But it seems certain, as pointed out by the last editor, that the extant fragment does not belong to the abridgement of Artemidorus, but to that of Menippus, a writer of the Augustan age, of whose work Marcianus had also made an epitome.

[6] Strabo, xvi. 4, §§ 5–19, pp. 769–778. No mention is made of Agatharchides by Strabo in connection with this description, though he elsewhere (p. 779) cites him at second hand in respect to the origin of the name of the Red Sea. It is evident that he had never seen his original work, and knew only that of Artemidorus. The two are printed side by side by C. Müller, from whence it is readily seen how closely the one is copied from the other.

ever, added a regular Periplus of the Red Sea, giving the distances from port to port, and from headland to headland, which are not found in our existing extracts from Agatharchides, and are a valuable addition to our geographical knowledge.[7] He described also in detail, though without giving distances, the coast of Africa from the Straits and the Promontory of Deire to the Southern Horn (Noti Keras), under which name he designated the eastern extremity of Africa, now known as Cape Guardafui.[8] He was aware that from thence the coast trended away towards the south, but in this direction, he adds, nothing more was known of it.[9] On this side therefore geography had made no progress since the days of Eratosthenes.

§ 2. In regard to India on the other hand Artemidorus appears to have followed inferior authorities, and his account of that country is treated by Strabo as superficial and inaccurate. The statement quoted from him concerning the course of the Ganges does not however bear out this censure: he described that river as flowing from the Emodi Mountains (one of the names under which the Greeks designated the Himalaya) towards the south, till it reached a city called by the same name (Ganges) and then turning to the east and holding that course as far as Palibothra and its outflow into the sea.[1] His estimate of the size of Taprobane—which he stated to be 7000 stadia in length and 5000 in breadth[2]—though greatly exaggerated, did not

[7] The whole length of the Red Sea he estimated at 14,000 stadia (1400 G. miles); which considerably exceeds the truth, the real length being just about 1200 geographical, or 1400 *English* miles.

[8] Id. xvi. 4, §§ 14, 15.

[9] τελευταῖον ἀκρωτήριον τῆς παραλίας ταυτῆς τὸ Νότου κέρας. κάμψαντι δὲ τοῦτο ὡς ἐπὶ μεσημβρίαν οὐκέτι, φησίν, ἔχομεν λιμένων ἀναγραφὰς οὐδὲ τόπων διὰ τὸ μηκέτι εἶναι γνώριμον τὴν ἐξῆς παραλίαν. Id. § 14, p. 774.

[1] Strab. xv. p. 719. Though of course not strictly accurate, this description is undoubtedly an improvement on the received idea that it flowed simply from west to east. Its large affluent, abounding in crocodiles and dolphins, which he called Œdanes, is otherwise unknown, but it seems probable that the true reading is Οἰμάνης, or Ἰομάνης, as suggested by the most recent editors, Coray and Kramer (*ad loc.*); in which case we have here the first mention by name of the Jumna.

[2] Stephan. Byzant. s. v. Ταπροβάνη. Our existing text of Stephanus gives only 500 stadia for the breadth of the island, but that is clearly erroneous, and there is little doubt that we should read, as suggested by Forbiger, πεντακισχιλίων for πεντακοσίων.

differ materially from that given by other geographers: the vast size of that island having become a received fact in traditional geography. Towards the north his knowledge was bounded by the same limits as that of his predecessors: beyond the Tanaïs, he stated, nothing was known, but that Sarmatian tribes occupied the regions to the north.[3]

§ 3. Artemidorus is censured by his epitomizer Marcianus as deficient in accurate geographical knowledge,[4] by which he probably means that he made no attempt to determine the position of places by their latitude and longitude (in the manner subsequently introduced by Ptolemy): but it is certain that he bestowed great pains upon the determination of distances, and not only produced in this manner the most accurate Periplus in detail that had yet been put together of the internal seas (the Mediterranean and the Euxine), but entered into an elaborate computation of the total length of the habitable world, from the mouth of the Ganges to the Sacred Promontory, which is adopted by Pliny as the most accurate known to him. It will be worth while briefly to compare the results with those arrived at by Eratosthenes.[5]

The whole distance from the Indian Ocean at the mouth of the Ganges to Gades he computed at 68,545 stadia; a sum total which he made up as follows. From the mouth of the Ganges through India and Parthia to Myriandrus on the Gulf of Issus he reckoned 41,725 stadia: thence by the most direct

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[3] Plin. *H. N.* ii. 108, § 246.

[4] τῆς μὲν ἀκριβοῦς γεωγραφίας λείπεται, *Epit.* p. 65.

[5] We have here the advantage that besides the extract given by Pliny (*H. N.* ii. 108, § 242, foll.), who has converted the stadia into Roman miles, we find that the measurements agree so exactly with those given by Agathemerus (*Geograph.* i. 4) as to leave no doubt that both are taken directly from the same source. The two statements thus serve mutually to correct one another; and Agathemerus has in many instances supplied details which are wanting in Pliny. The numbers are, as usual, frequently corrupt, but by comparing the two lists, and the details with the sums total, they can in most instances be restored with reasonable certainty.

It is unfortunate that Artemidorus, in stating these distances, appears to have reckoned them all from Gades; while Eratosthenes and other writers generally reckoned them from the Strait of the Columns, and we do not know exactly the distance assigned by Artemidorus between the two. But the interval is stated by Strabo at 750, or 800 stadia; and the difference is immaterial (Strabo, iii. 1, p. 140).

course by sea, touching at Cyprus, Patarä in Lycia, the islands of Rhodes and Astypalæa, the promontory of Tænarus in Laconia, Cape Pachynus and Lilybæum in Sicily and Caralis in Sardinia, to Gades 26,820.[6] To this he added 3932 stadia from Gades by the Sacred Promontory to that of the Artabri (Cape Finisterre)[7] which he appears to have considered—contrary to the received opinion among his contemporaries—as the most westerly point of Europe.

§ 4. But besides this computation, which (as will be seen) did not differ materially from that of Eratosthenes, though based upon more accurate measurements in detail, Artemidorus gave another estimate, founded as far as possible upon itinerary or terrestrial measurements, which he regarded as more trustworthy than those by sea.[8] This second line proceeded across Asia from the mouth of the Ganges to the Euphrates, a distance which he reckoned at 41,350 stadia:[9] thence to Mazaca in Cappadocia 2550; thence through Phrygia and Caria to Ephesus 3320 stadia; from Ephesus across the Ægean Sea to Delos 1600, and thence to the Isthmus of Corinth 1700 stadia. Thence he drew the line by Patræ, Leucadia, Corcyra, to the Acroceraunian promontory and thence across the sea to Brundusium, which he placed at 3880 stadia from Corinth: thence to Rome by land 2880 stadia. From Rome

[6] Note B, p. 102.

[7] In regard to this number the MSS. both of Pliny and Agathemerus vary (see Müller's note). As we know from Strabo that Artemidorus correctly reduced the distance from Gades to the Sacred Promontory to 1700 stadia, it seems difficult to believe that he regarded the other as projecting more than 2000 stadia, or (according to one reading) more than 5000 stadia farther west.

[8] The expression "alia via, *quæ certior*, itinere terreno maxime patet a Gange," &c. is indeed found only in Pliny, and not in Agathemerus, but it is certainly most probable that it proceeds from Artemidorus and not from Pliny himself.

[9] No details are here given; but on the former line Agathemerus reckons 16,000 stadia from the mouth of the Ganges to that of the Indus; from the Indus to the Caspian Gates 15,300: and thence to the Euphrates 10,050; making up precisely the sum here stated. The point on the Euphrates was probably the Zeugma (opposite Bir), from whence was the shortest overland route to Myriandrus.

Strabo states (p. 664) that Artemidorus agreed with Eratosthenes in regard to the direct distance from the Euphrates to India; and we know that Eratosthenes reckoned in round numbers 40,000 stadia; but doubtless the discrepancy was regarded by Strabo as immaterial.

he followed the line of the Roman roads to Scingomagus at the foot of the Alps, a distance of 519 Roman miles or 4152 stadia; thence to Illiberis at the foot of the Pyrenees 3747 stadia, and thence through Spain to Gades 6650 stadia.[1] The whole result thus obtained was 71,560 stadia: an excess of more than 3000 stadia over his other estimate, which was the natural consequence of the devious course that this second line had in fact pursued. Of the extent of those deviations Artemidorus had undoubtedly no idea, but it is difficult to suppose that he really regarded Ephesus, Corinth, Brundusium, Rome, Susa, Illiberis and Gades, as situated nearly enough in the same latitude to allow of a line passing through those points presenting any approximation to a measurement of the earth's longitude.[2] Yet we find no indication of his having applied any subsequent correction to the sum total thus attained: and it appears certain that, while Artemidorus deserves great credit for having seen the important advantage to be derived from the Roman roads, with their measured distances, he still failed to see the necessity of applying to these *itinerary* distances the corrections necessary in order to deduce from them any *geographical* results.

§ 5. He next proceeded to give in like manner a measurement of the breadth of the habitable world from the Ethiopian Ocean, which he placed 5000 stadia to the south of Meroë[3]—

[1] Agathemerus, § 17; Plin. *H.N.* ii. 108, § 244. The numbers in the two last cases are corrupt and erroneous in all our MSS. I have adopted the corrections proposed by C. Müller. The sum total being fixed, as Agathemerus and Pliny here coincide, the details are of less importance. But as the route followed by Artemidorus through Gaul and Spain is uncertain, we cannot feel any security as to the numbers given.

[2] It is sufficient to say roughly that Ephesus and Corinth are in about 38° N. lat., Rome about 42°, Susa (Scingomagus), above 45°, and Gades 36½°.

It appears almost more strange that in a sea with which the Greeks were so well acquainted as that between Greece and Italy, he could suppose that a line from Patræ by Leucadia, Corcyra, and the Acroceraunian Promontory to Brundusium would nearly coincide with a prolongation of the parallel through Ephesus and Corinth. But when we come to consider the map of the Mediterranean as conceived by Strabo, we shall see that it in great measure agrees with this assumption of Artemidorus.

[3] The mention of this Ethiopian Ocean is very remarkable. Though Strabo has preserved to us such copious extracts from the part of the work of Artemidorus relating to the Erythræan Sea and the Ethiopian tribes, there is no mention of anything corresponding

to the Tanaïs, his extreme limit to the north. This also he reckoned along two different lines, both however proceeding from Alexandria by Rhodes to Tenedos and the mouth of the Hellespont, and thence by the Bosphorus to Cape Carambis, from whence it crossed the Euxine to the entrance of the Palus Mæotis and thence to the mouth of the Tanaïs. The two calculations (into the details of which it is unnecessary to enter) gave as their results 18,056 and 18,690 stadia respectively from Alexandria to the mouth of the Tanaïs. Adding to these the distance from Alexandria to Meroë, which he estimated, in accordance with Eratosthenes, at 10,000 stadia, and that to the Ethiopian Ocean at 5000 more, we should obtain totals of 33,056 and 33,690 stadia, the last of which corresponds exactly with that given by Pliny (according to the best MSS.) of 4212 miles or 33,696 stadia.[4] He thus arrived at the same conclusion with Eratosthenes that the breadth of the inhabited world was rather less than half its length. Their results were however based on a very different calculation; Eratosthenes having extended his measurement far to the north in Scythia in order to attain the latitude of Thulè, while Artemidorus carried his farther to the south, to the supposed Ethiopian Ocean.

§ 6. Besides these principal lines, numerous other distances are cited from Artemidorus by Strabo, the most important of which are those given along a line of itinerary route from Ephesus to the Euphrates, which he expressly described as being the high-road followed by all who travelled towards the

to this expression. It would seem as if Artemidorus had supposed the sea to sweep round from the Southern Horn (which was the farthest point known to him) at once to the south of Ethiopia. Eratosthenes, as we have seen, placed the Region of Cinnamon in the same parallel with the Sembritæ on the Upper Nile, at a distance of 3500 stadia south of Meroë.

[4] For the discussion of these numbers see the note of C. Müller on Agathemerus in his *Geographi Græci Minores* (tom. ii. p. 481). The old editions of Agathemerus all gave 8000 stadia for the first stage in the measurement—the distance from the Ethiopian Ocean to Meroë—but all the best MSS. have 5000; and this agrees with the result given by Pliny according to the best MSS.; the received text of later editions (including that of Sillig) having been altered in accordance with a conjecture of Harduin's, so as to correspond with the erroneous reading of Agathemerus.

east.[5] It ascended the valley of the Mæander to Laodicea, thence through Phrygia, the Paroreios, and Lycaonia, to Mazaca, the capital of Cappadocia, from which it proceeded to the Euphrates, at a place called Tomisa on the borders of Sophene in Armenia, which appears at this time to have been a town of importance.[6] From thence a line of route led across the chain of Mount Taurus southwards to Samosata, and thence across Mesopotamia. East of the Euphrates, according to Strabo, the distances given by Artemidorus did not differ from those of Eratosthenes; probably he had in fact no fresh materials by which to correct them.[7]

The work of Artemidorus appears to have continued for a long period to enjoy considerable reputation, probably on account of its general and systematic character, as well as the accuracy of its details as to distances, dimensions of islands, &c. At the same time Strabo, though frequently availing himself of its authority, does not place it on a par with those of Polybius and Posidonius, nor think it necessary to enter into any regular exposition of the system of its author, which probably did not differ materially from that of Eratosthenes.

§ 7. To the same period with Artemidorus belong two other writers whose names deserve a passing mention, as they left geographical works, which, though now utterly lost, are frequently cited by later authorities. One of these is METRODORUS of Scepsis, who was a rhetorician of eminence, and played a considerable part in political life. Among his various writings, we are told that he left a Periegesis, which must have been a work of a distinctly geographical character, and from which the statements quoted from him by Pliny and

[5] Artemidor. ap. Strab. xiv. 2, p. 663. *ἐπεὶ δὲ κοινή τις ὁδὸς τέτριπται ἅπασι τοῖς ἐπὶ τὰς ἀνατολὰς ὁδοιποροῦσιν ἐξ Ἐφέσου.* At a later period this line of route seems to have ceased to be frequented, as it is not found in any of the Roman Itineraries. Its details will be more fully examined in the chapter on Strabo's geography of these countries.

[6] It is called by Strabo *φρούριον ἀξιόλογον* (xii. 2, p. 535), and was given over by Lucullus to Ariarathes, king of Cappadocia, as a reward for the services he had rendered in the Mithridatic War.

[7] Strabo, xiv. 2, p. 663.

Stephanus of Byzantium were probably taken. Far more numerous are the citations from the other author above referred to; CORNELIUS ALEXANDER, surnamed POLYHISTOR, on account of the extent and variety of his knowledge. He appears to have left a considerable number of works treating of the geography, as well as the history and antiquities, of different countries, as Egypt, Syria, Lycia, Phrygia, &c.: but unfortunately our knowledge of them is due almost entirely to the jejune citations of Stephanus of Byzantium, which generally preserve to us nothing more than barren names.[8]

SECTION 4.—*Scymnus Chius.*

Of a very different character was a little work, which has received in modern times far more attention than it deserves, from the accidental circumstance of its having been in great part preserved to us, while so many more valuable and important treatises on the same subject have perished. This is the little compendium of geography in iambic verse, commonly known, though without any foundation, under the name of SCYMNUS CHIUS. It belongs unquestionably to the period we are now considering, being dedicated to a certain Nicomedes, king of Bithynia, who, as C. Müller has shown, must be the third monarch of the name, who reigned from the year 91 to 76 B.C.[9] But the author is in reality wholly unknown. The principal fragment was preserved in the same MS. with the Epitomes of Marcianus of Heraclea, and was in consequence first published under the name of that author—an attribution clearly erroneous. Holstenius and Isaac Vossius

[8] The fragments both of Metrodorus and Alexander Polyhistor are collected by C. Müller in his *Fragmenta Historicorum Græcorum*, tom. iii. pp. 203–214. It is uncertain whether the different writings of Alexander quoted by Stephanus under the names of Αἰγυπτιακά, περὶ Καρίας, περὶ Λυκίας, &c., formed separate treatises, or were parts of one great work, but the former hypothesis is the most probable.

[9] See his Prolegomena in his *Geogr. Græci Minores*, tom. i. p. lxxvii.

were the first to attribute it to Scymnus Chius, a writer cited more than once by late grammarians as author of a Periegesis:[1] and it continued to pass under his name till the year 1846, when Meineke, in republishing the extant fragments, showed clearly that there were no grounds for ascribing them to that writer. The real work of Scymnus Chius, whose age is wholly unknown, appears to have been in prose, and the few statements cited from him are not in accordance with those of our author.[2]

The portions of the work that have been preserved to us consist, first, of a long continuous fragment of more than 700 lines, containing the introduction, a rambling and ill-written prefatory discourse, together with the greater part of the division of the work relating to Europe. Besides this, there are numerous smaller fragments concerning the shores of the Euxine, both the European and Asiatic sides, which had been incorporated by the author of the anonymous Periplus of the Euxine Sea, usually published as a kind of sequel to that of Arrian.[3] All that related to the rest of Asia and Africa is wholly lost to us.

§ 2. The anonymous author professes to have composed his little work in imitation of the chronological treatise of Apollodorus, and in like manner put it in iambic verse, for the purpose of its being more easily remembered.[4] Both his style and his versification are very indifferent; and the work is wholly

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[1] Scymnus Chius is cited by name several times by Stephanus of Byzantium, and also by the Scholiast on Apollonius Rhodius, iv. 284. Nothing is known concerning him from other sources.

[2] See Meineke's Preface to his edition of Scymnus Chius (Berolin. 1846). His views have been adopted by C. Müller in his recent edition of the *Geographi Græci Minores* (tom. i. Prolegom. p. lxxiv–lxxvii). Meineke however has retained the name "utpote longo duorum sæculorum usu receptum," and, as a matter of convenience, I have done the same, when I have had occasion to cite the little work in question.

[3] They were first recovered, and distinguished from the prose text in which they are thus incorporated, by Holstenius, whose arrangement of the verses has been generally followed by the later editors.

[4] vv. 19–35. It is singular that he does not advert to the *geographical* work of Apollodorus, which was also in iambic verse (see above, p. 49), and would seem to furnish a better precedent.

destitute of anything like poetical ornament or character; but these defects might be excused, if the matter were more valuable or trustworthy. The book was indeed designed only as a popular compendium for general use: and therefore makes no pretence to novelty or profound research.[5] But while its writer gives a long list of authors whom he had consulted, or professed to consult,[6] he was wholly without the critical skill to compare and discriminate between his different authorities, or to discard the statements of earlier writers, which the progress of geographical knowledge had shown to be erroneous. Thus one of his principal authorities is Ephorus, and he often makes unhesitating use of that author, without reference to the results of more recent discoveries. The consequence is that his book, instead of representing the state of geographical knowledge in his own day, is a jumble of confused statements belonging to wholly different periods. By far its greatest value at the present day arises from the notices taken from Ephorus, Timæus, and other earlier authors (cited with their names), concerning the foundation of the different Greek colonies and cities on the coasts of the Mediterranean. In this respect indeed we derive from it some important accessions to our knowledge. But in a strictly geographical point of view it is almost wholly worthless.

§ 3. The best part of that which remains to us, is undoubtedly the description of the coasts of the Euxine, which is taken principally, as he himself informs us, from Demetrius

[5] Its author, however, claims in one passage (vv. 128–136) to have carefully investigated and *visited in person* not only the cities of Greece and Asia Minor, but those of the Adriatic and Ionian Seas, and those of Tyrrhenia, Sicily, and other western lands, as well as Carthage and a great part of Libya. But it is certain that no trace of any additional information derived from this source is to be found in the poem.

[6] Unfortunately this passage of his work (vv. 110–125) is corrupt, and the names of several of the authors cannot be determined. He professes to have followed Eratosthenes most of all, then Ephorus, Dionysius of Chalcis, who had written five books on the κτίσεις, or foundations of cities, the Sicilian Cleon (a writer very little known, but cited also by Marcianus of Heraclea) and Timosthenes. Then follow some lines which cannot be deciphered, after which he adds the names of Timæus and Herodotus.

of Callatia, a writer otherwise almost unknown,[7] but who seems to have been judicious and well-informed. Besides the Periplus of its shores, we find many interesting notices of the foundation of the numerous Milesian and other Ionian colonies that bordered its circumference.[8] But of the Scythian tribes on the north his account is taken exclusively from Ephorus, and it does not appear that any progress had been made in geographical knowledge in that quarter. He states indeed that the Borysthenes was navigable for forty days from its mouth;[9] and dwells strongly upon its commercial advantages—its quantity of large fish, as well as the flocks and herds, and crops of corn on its fertile banks, so that he terms it "the most useful" of all rivers;[1] but he describes it as inaccessible in the upper part of its course from ice and snow. Beyond the nations that he enumerates, none of whom were far removed from the Euxine, he says that the country was altogether uninhabited and unknown. The Tanaïs, he tells us, was according to some a branch of the Araxes—a strange misconception, though shared as we have seen, even by Aristotle[2]—but Ephorus described it as flowing from a great lake; a statement probably copied from Herodotus.

§ 4. With regard to the west of Europe his accounts are very confused and erroneous, and evidently reflect the vague notions current in the days of Ephorus and Timæus, without reference to the more exact information that was available at the time he wrote. Thus he represents the Celts as inhabiting the whole western region from the neighbourhood of Gades and Tartessus (an old name which he borrowed from Eratosthenes[3]) to near the head of the Adriatic. He adds a

[7] He is probably the same as the Demetrius, mentioned without any other adjunct by Agatharchides (§ 64), as one of the writers who had given the best accounts of the northern regions of the earth.

[8] See Chapter IV. § 2.

[9] v. 816. This statement is undoubtedly copied from Herodotus, and goes far to show that there is no error in the existing *text* of that author, whatever we may think of the accuracy of his information.

[1] οὗτος δὲ πάντων ἐστὶ χρειωδέστατος, v. 813.

[2] *Meteorologica*, i. 13, § 16.

[3] The name of Tartessus, which was at first applied to the south of Spain

strange story of there being a great northern column at the extreme limit of their country projecting like a promontory into a stormy sea, from the foot of which the Danube (Ister) took its rise.[4] That river he conceived, in accordance with the notion so long prevalent among the Greeks, to flow with one arm into the Adriatic, with another into the Euxine; and he repeats, as usual, the fables concerning the Eridanus, and the amber distilling from the poplars on its banks. He also places the Electrides, or Amber Islands, near the head of the Adriatic; and what is more remarkable, mentions two other islands in the same neighbourhood as producing the finest tin.[5]

On the other hand his notices of the Greek colonies on the coast of Liguria and Spain, from Massilia and its dependencies to Rhoda near Emporium, and even the outlying settlement of Mænace near the columns of Hercules, is exact and instructive. The same remark applies to his account of the Greek cities in Sicily, concerning which he had good authorities; but he does not even condescend to mention by name those of Punic origin, though Panormus and Lilybæum were undoubtedly in his time among the most important cities of the island. His account of Italy is in like manner very confused; here again his information concerning the Greek colonies is valuable and

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generally, gradually disappeared as the Greeks became better acquainted with that country, much as the name of Cathay has done in modern times. Eratosthenes still applied the name to the territory near Calpe; but Artemidorus, who had himself visited the country, denied that any such name was found there (Strab. iii. 2, p. 148). Others gave the name of Tartessus to a river, which Strabo identifies with the Bætis or Guadalquivir; and he considers the region of Tartessus to be the same with the land of the Turduli, the modern Andalusia (ibid.).

It is remarkable that our author describes Tartessus as producing in abundance (*i.e.* trading in) "the stream-washed tin of Gaul" as well as gold and brass.

ἡ λεγομένη Ταρτησσὸς, ἐπιφανὴς πόλις,
ποταμόρρυτον κασσίτερον ἐκ τῆς Κελτικῆς
χρυσόν τε καὶ χαλκὸν φέρουσα πλείονα.
vv. 164–166.

[4] vv. 188–195.

[5] *δύο δὲ κατ' αὐτούς εἰσι νῆσοι κείμεναι*
κασσίτερον αἳ δοκοῦσι κάλλιστον φέρειν.
vv. 399, 400.

This is, as far as I remember, the only notice connecting the *tin islands* with the Adriatic. It would seem to indicate that tin, as well as amber, was sometimes brought overland to the head of that gulf: but such a trade could hardly be carried on to any considerable extent.

interesting, while his notices of the nations inhabiting the peninsula are a jumble of statements derived from the earliest Greek writers, with a few that belong to a later period.[6] In general it may be said that his ethnography of Italy is not at all in advance of that of Scylax, who wrote two centuries and a half before him; except that he naturally dwells emphatically upon the power and importance of Rome;[7] a topic that could scarcely be omitted by a writer in his time.

With regard to Greece itself he expressly tells us that he followed the authority of Ephorus;[8] but this part of his work is meagre and of little value. He could not indeed be expected to add to our geographical knowledge of countries so familiar to all. His account of the Adriatic on the other hand was taken from Theopompus;[9] so little did he attempt to avail himself of the latest and best authorities; and is in consequence full of errors.[1]

SECTION 5.—*Voyage of Eudoxus.*

§ 1. We have seen from the above review how little progress was made, through the whole Alexandrian period, after the reigns of the three first Ptolemies, in the knowledge of the external coasts of Africa or Asia. The commercial relations then established appear to have settled down into a regular routine, from which there was little, if any, deviation; and geographical explorations, or voyages of discovery in the modern sense, were very rarely undertaken in ancient times. There was however one notable exception during the period in question, which well deserves our attention, though our information concerning it is unfortunately very imperfect.

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[6] Thus he mentions Œnotria and the Œnotrians—an appellation used only by the Greeks in early times, together with the Samnites, Lucanians, and Campanians (vv. 241–244).

[7] He calls it ἄστρον τι κοινὸν τῆς ὅλης οἰκουμένης, v. 233.

[8] v. 472.

[9] v. 370.

[1] Thus he repeats the strange statement that the Hyllic Chersonese (the peninsula of Sabioncello) was about as large as the Peloponnese.

This was the voyage of EUDOXUS of CYZICUS, our knowledge of which is derived exclusively from the account given by Posidonius, and preserved to us by Strabo.[2]

According to this narrative, Eudoxus, who was a man of education and of an inquisitive mind, had been sent by his native city on an honorary mission to the court of Ptolemy Euergetes II. (Physcon), and was much occupied with inquiries concerning the course and sources of the Nile. While he was still at Alexandria it happened that an Indian was brought to the king by the guards of the Arabian Gulf (the Red Sea), whom they reported that they had found alone in a ship which had been wrecked on the coast. As soon as he had learnt a few words of Greek so as to make himself understood, the captive stated that he had set sail from India, and the ship having been driven out of her course all his companions had perished of hunger, leaving him the sole survivor. He offered, moreover, if the king would fit out a ship, to direct them on their way to India; an offer which was accepted, and Eudoxus among others took part in the adventure. They accomplished the voyage successfully, and having taken with them suitable presents, brought back in return a valuable cargo of spices and precious stones. Eudoxus however was frustrated in his hopes of private advantage, the king having seized and appropriated the whole cargo. But after the death of the tyrant (in B.C. 117) his wife Cleopatra who succeeded him in the government,[3] sent out Eudoxus a second time with more extensive

[2] Posidonius ap. Strab. ii. 3, § 4, pp. 98–100.

[3] There is some little uncertainty with regard to the chronology of these voyages of Eudoxus, but their date may be fixed within very narrow limits. His first voyage took place in the reign of Ptolemy Euergetes II., who died in B.C. 117. Cleopatra at first reigned conjointly with her elder son, Ptolemy Lathyrus, and it was during this period that she sent out Eudoxus, the second time. But before his return Cleopatra had quarrelled with her son, and had been compelled to leave him in sole possession of the sovereignty. This took place about B.C. 112, and explains the statement of Posidonius that when Eudoxus returned from his second voyage he found Cleopatra no longer at the head of affairs, but her son, by whom he was despoiled for the second time (p. 99). The expression of Cornelius Nepos (ap. Plin. ii. 67), that he fled from Ptolemy *Lathyrus* (cum Lathyrum regem fugeret), was correct, though it does not refer to the reign of Lathyrus as sole monarch after the

equipment. He again accomplished the voyage in safety, but on his return was driven out of his course by adverse winds beyond Ethiopia. He however found a friendly reception from the natives, some words of whose language he wrote down; and brought away with him the sculptured prow of a ship which had been wrecked on the coast and was reported to have belonged to some navigators who had come *from the westward.* Returning to Alexandria in safety he was again plundered of all the produce of his expedition. But having shown the prow which he had brought with him to the sailors and traders in the port, it was recognized as belonging to a class of ships that were in the habit of sailing from Gades, and some even asserted that it was that of a particular vessel that had sailed beyond the river Lixus in Mauretania, and had never been again heard of.

§ 2. Eudoxus now abandoned all reliance upon the Egyptian monarchs, but being convinced that it was possible to sail round Africa, he determined to try the experiment; and for this purpose, after returning to his own country, he embarked his whole fortune on board another ship with which he sailed first to Dicæarchia in Italy, then to Massilia and ultimately to Gades. Everywhere he proclaimed the object of his enterprise and obtained so much assistance that he was able to fit out a large ship, with two light vessels, similar to those used by pirates, to accompany it, evidently with a view to facilitate his landing from place to place. In addition to the crews he took on board physicians, artisans of various kinds, and dancing girls from Gades; and thus equipped set out "on his voyage to India." At first he stood well out to sea, meeting with continual westerly winds; but after a time the discontent of those on board compelled him to approach the land; where he

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death of his mother; which belongs to a later period, B.C. 89–81. We may, therefore, suppose Eudoxus to have set out on his second voyage about B.C. 113, and to have returned in B.C. 112, or 111. (See this point fully discussed by C. Müller in the Prolegomena to his *Geographi Græci Minores*, tom. i. p. lvii.)

met with the disaster he had feared, his large ship having run aground, so that he was unable to get her off again. His crews however and cargo were saved, and out of the timbers of the lost vessel he was able to construct a third bark, about the size of a penteconter. He then resumed his voyage, until he reached a tribe of Ethiopians who spoke the same language with those that he had previously visited on the eastern coast of Africa, and whose words he had written down. From these he learned that their territory adjoined that of Bocchus, king of Mauretania.

At this point—for what reason we are not told, but probably on account of the small size of his vessels—he determined for the present to abandon the enterprise and return northwards. On reaching Mauretania he sold his barks and proceeded by land to the court of Bocchus, whom he endeavoured to persuade to fit out a fresh expedition. Finding however after a time that his efforts were unavailing and that his life was in danger, he fled from Mauretania, and took refuge in the Roman territory. But his spirit was still unbroken; he returned to Gades, and there fitted out another large ship, with a penteconter to accompany it. On his former voyage he had discovered an island abounding in wood and water, but uninhabited; and he now took with him agricultural implements, seeds and building materials, with a view to establish himself there for the winter, if his voyage should be delayed.

§ 3. Here the narrative of Posidonius unfortunately breaks off abruptly; of the subsequent fortunes of Eudoxus he knew nothing; but he accepted his conclusion, though certainly based on most inadequate evidence, that Africa could be circumnavigated. Strabo on the contrary treats the whole story with contempt, and reproaches Posidonius for his credulity in giving credit to an old wife's tale, which he regards as on a level with the fictions of Euhemerus and Antiphanes.[4] There is certainly no foundation for this; the story of Eudoxus,

[4] Strabo, ii. 3, § 5, pp. 100–102.

as related by Posidonius, contains nothing either absurd or incredible; the most remarkable point in it—though one that attracted least attention—his having accomplished two direct voyages to India and back, is rendered not improbable by the facility with which the same voyage was performed at a later period, from the time of Hippalus onward. In regard to Africa we do not know how far he advanced along either the eastern or western coasts of the continent, but there is no reason to suppose that he proceeded very far. The expression "beyond Ethiopia" probably means no more than that he was carried to the coast south of Cape Guardafui, at that time the limit of the Greek knowledge in this direction; while on the other side we are distinctly told that the farthest tribes whom he visited bordered on the dominions of king Bocchus, and were therefore not very remote from Mauretania.[5] His only contribution to the proof that Africa was really surrounded by the ocean was derived from the idle story of the ship's prow being one that came from Gades, on which certainly no reliance could be placed,[6] and in this respect Posidonius undoubtedly merits the censure of Strabo, for having admitted this as conclusive proof, while he rejected the story of the circumnavigation as told by Herodotus.

It is a striking instance of the carelessness with which such statements were repeated at second hand by ancient writers, that Pliny quotes Cornelius Nepos as relating that Eudoxus, in making his escape from Ptolemy Lathyrus had sailed round from the Arabian Gulf (the Red Sea) all the way to Gades![7] The readiness with which such stories were credited arose not merely from the general belief that Africa was bounded by a

[5] Strabo, *l. c.* p. 100. This statement would seem to exclude the supposition of his having advanced beyond the Great Desert, and come in contact with the negro tribes on the coast visited by Hanno.

[6] It is indeed true that fragments of wrecks have been occasionally carried for very long distances (see the case quoted by Humboldt, *Cosmos*, vol. ii. note 163, Engl. transl.). But the currents on the east coast of Africa would be altogether unfavourable; and the evidence of *identity* (the chief point of all) appears to have been very questionable.

[7] Plin. *H. N.* ii. 67, § 169. The same statement is made by Pomponius Mela (iii. 9, § 90), also on the authority of Cornelius Nepos.

circumfluous ocean, but from the erroneous idea that that ocean was far less distant to the south than it really was. Had the continent possessed the form supposed by Eratosthenes and Strabo, its circumnavigation would have been a comparatively easy affair.[8]

SECTION 6.—*Roman Wars: the Jugurthine and Mithridatic Wars.*

§ 1. Meanwhile the Roman arms were opening the way for a more accurate knowledge of Northern Africa. We have seen that the acquaintance possessed by the Greeks with that region was substantially bounded by the Carthaginian territory on the west, and that though they were familiar with the *paraplus* or voyage along the coast of the Mediterranean from Carthage to the Straits of the Columns, they had little, if any, knowledge of the interior. The Carthaginians themselves appear to have had but few settlements of importance along this line of coast: and if they carried on any trade with the tribes of the interior, from this all foreigners would doubtless be jealously excluded. But as early as the Second Punic War, the Romans came of necessity into contact with the Numidian tribes which had previously been connected with Carthage only: and the opposite part taken by the two great divisions of the nation—the Massylians and Massæsylians—under their respective chiefs, Masinissa and Syphax, must have rendered all Roman writers familiar with these two leading divisions of the Numidian race.[9] The result of the war was to place the whole Numidian territory from the frontiers of the narrow province still left to Carthage, to the river Mulucha, which separated it from Mauretania on the west,[1] under the dominion

[8] See the maps representing the form of the known world as conceived by both these geographers.

[9] The names both of the Massyli and Massæsyli are found in Polybius (iii. 33). That of the Maccæi mentioned by the same writer, in conjunction with them, is not found in any later author.

[1] The river Mulucha, called by Strabo Molochath, which still continued in the time of Pliny to be the limit

of Masinissa, and subsequently of his son Micipsa. But until the ambition of Jugurtha involved him in war with Rome, it is not probable that anything had occurred to lead to any more accurate knowledge of the countries in question. We learn indeed that Roman and Italian traders had established themselves in considerable numbers in a few of the towns, such as Vaga and Cirta, which nearly adjoined the Roman province, or were but little removed from the sea:[2] but it is probable that they extended their relations little farther to the west, and the statement of Sallust that before the Jugurthine War the Romans were known only by name to the Mauretanians,[3] may be accepted as nearly, if not literally, correct. The Gætulians beyond the range of Mount Atlas towards the interior were merely wild nomad tribes, wanting the first elements of civilization, and apparently as yet unvisited by all but native traders. They were for the first time enlisted by Jugurtha, and rendered him valuable assistance as irregular cavalry.

§ 2. The operations of the war were not of a nature to throw much light upon the geography, at least of the more remote parts of Numidia, and they are very obscurely related by Sallust. The farthest point to which the Roman arms were carried towards the south was Capsa, a short distance to the north of the Tritonian Lake, and surrounded by barren deserts, notwithstanding which it was attacked and taken by Marius. That general appears also in his last campaign to have carried his arms as far as the frontiers of the kingdom of Bocchus, near the river Mulucha: but this part of his operations is very imperfectly described. No part of Numidia was at this time permanently annexed to the Roman dominion: after the final defeat of Jugurtha in B.C. 106, it was placed under the government of Hiempsal, and it did not become a Roman province

between the Mauretanians and Massæsylians, may be clearly identified with the Wad el Maloush, or Maloya, which falls into the Gulf of Melillah, near the present boundary between Algiers and Morocco.

[2] Sallust. *Bell. Jugurth.* c. 21, 26, 47.

[3] Id. ibid. 19. "Mauris omnibus rex Bocchus imperitabat, præter nomen cetera ignarus populi Romani, itemque nobis neque bello neque pace antea cognitus."

till the time of Cæsar, B.C. 46. Mauretania still retained its independence, but it was brought into more frequent relations with Rome during the civil wars of Sertorius in Spain.

§ 3. It is in connection with the wars last alluded to, that we find the first distinct mention of a discovery which ever after retained its place in ancient geography. We have seen above (p. 60) that Eudoxus of Cyzicus was reported to have discovered in his voyage along the west coast of Africa an uninhabited island, abounding in wood and water, of which he conceived so favourable an opinion that he set out on his second voyage with the idea of establishing himself there for the winter. The account is too vague to enable us to determine whether this might be Madeira or one of the Canary Islands: it is certain that there is no small island nearer to the mainland at all answering this description. Other indications also point to the fact that the existence of these outlying islands in the Atlantic was at this time well known to the traders of Gades. Among these the most familiar is the story told by Plutarch[4] of Sertorius having fallen in near the mouth of the Bætis with some sailors who had just arrived from "the Atlantic Islands," which they reported to be two in number, separated only by a narrow strait, and distant about 10,000 stadia from the coast of Africa. They enjoyed the most perfect of climates—warm, without excessive heat—with only as much rain as was desirable, but soft and damp winds continually blowing, so as to maintain an equable temperature, and produce an unexampled degree of fertility. Not only were the islands well adapted for tillage and the growth of fruit-trees, but they produced of their own accord such abundance of fruits of various kinds as would suffice to support a whole population without toil or labour. These fortunate conditions led the mariners of Gades to identify the islands in question with the Islands of the Blest, of which the Greek

[4] Plut. *Sertorius*, c. 8. The same story was related by Sallust in the first book of his *Histories*, fr. 67, 68: from whom Plutarch probably copied it.

poets had sung: an assumption subsequently adopted by almost all Greek and Roman writers. Sertorius, who was at the time with difficulty making head against his enemies, was disposed to sail away at once to these happy abodes and settle himself permanently there: but his crews were unwilling to follow him, and he was compelled to abandon the idea. Hence "the Islands of the Blest" continued until a much later period to float in a state of dim geographical vagueness bordering on the mythical.[5] The name of the Fortunatæ Insulæ was afterwards applied more specially to the group of the Canary Islands; but the account given in this—the earliest notice of the discovery of any of these outlying Atlantic islands—and especially of their great distance from the mainland of Africa, certainly seems to point to Madeira and Porto Santo as the two islands in question.[6]

§ 4. At this period Gades was undoubtedly one of the most important emporiums of trade in the world: her citizens having absorbed a large part of the commerce that had previously belonged to Carthage. In the time of Strabo they still retained almost the whole trade with the Outer Sea, or Atlantic coasts, both of Africa and Europe: and carried on extensive fisheries on the coast of Mauretania, while they sent large ships on long voyages both in the Ocean and the Mediterranean.[7] The terms in which Strabo speaks of the extent of the trade of Gades and the opulence of its merchants, as compared with the narrow limits and natural disadvantages of the islet on which it stood, remind one strongly of the parallel

[5] See especially the well-known poetical description of them by Horace in one of his Epodes (*Epod.* 16, vv. 41–66), a passage which was in great probability suggested by this very incident in the life of Sertorius.

[6] Not only does the description of the peculiarly damp and equable climate apply much better to Madeira than to any of the Canary Islands, but the whole account especially described the islands as situated in the midst of the Ocean, and though the distance of 10,000 stadia from the continent is in any case a gross exaggeration, it is impossible to believe that it could have been applied to islands like Lanzarote or Fuerteventura lying only about 50 or 60 miles from the mainland.

The incidental notice of them by Strabo (iii. 2, § 13, p. 150), as situated "not far from the promontory of Mauretania opposite to Gades" seems to point to a similar conclusion.

[7] Strabo, iii. 5, § 3, p. 168.

case of Venice in the Middle Ages. And we learn from incidental notices in the history of Eudoxus, already related, that this was already the case at least a century before the time of Strabo.[8] The general insurrection of the native tribes of the Iberian peninsula, which had been aroused by Sertorius, led to extensive military operations for their reduction, and when Pompey returned from thence to Italy he erected on the summit of the pass across the Pyrenees a monument as a trophy, which recorded that he had reduced to subjection not less than 876 towns in that country.[9] The number is doubtless an exaggeration, more especially if we regard it, as Pliny certainly did, as confined solely to the eastern province or Hispania Citerior. But we have no details of these campaigns, and are therefore unable to judge how far they contributed to extend or improve the geographical knowledge of the peninsula.

§ 5. During the same period the Roman arms were actively employed in the East, and here the operations of Lucullus, and afterwards of Pompey, against Mithridates and Tigranes, undoubtedly added largely to the geographical information of the Romans in regard to portions of Asia that were previously very imperfectly known either to them or to the Greeks. Mithridates, the sixth monarch of the name, who had succeeded in B.C. 120 to his paternal kingdom of Pontus,[1] including portions of Paphlagonia and Cappadocia, had gradually extended his arms over the neighbouring nations towards the east and north, including the region known as Lesser Armenia (west of the Euphrates, between that river and Cappadocia) and the whole of Colchis, with the other wild tribes that extended from thence to

[8] Id. ii. 3, § 4, p. 99.
[9] Plin. iii. 3, § 18.
[1] The kingdom of Pontus had been founded, soon after the death of Alexander (apparently about 318 B.C.), by Mithridates the son of Ariobarzanes, who is usually styled Mithridates II., though he was really the first monarch of the dynasty who had any claim to be regarded as an independent sovereign. It extended from the frontiers of Colchis on the east to the Halys on the west; but its limits on the south were probably never very clearly defined, and its rulers were almost perpetually engaged in hostilities with those of Cappadocia, a country of which Pontus had originally formed part.

the Caucasus. So extensive indeed had his power and influence become, that Parisades, the ruler of the petty Greek kingdom that had so long maintained itself on the shores of the Cimmerian Bosporus, was induced to place himself under the sovereignty of Mithridates, in order to obtain the protection of his arms against the northern barbarians,—the Sarmatians and Roxolani, who were now pressing hard upon the Greek settlements in this quarter.[2] The same course was subsequently adopted by the free cities of Chersonesus and Olbia. The generals of Mithridates, Diophantus and Neoptolemus, fully answered the expectations entertained from them: they defeated the barbarians in several battles, and carried their victorious arms to the Tanaïs on the one side, and to the Tyras (Dniester) on the other, where a fort called the Tower of Neoptolemus, near the mouth of the river, served to mark the limit of his temporary dominion.[3] But even beyond these limits he concluded alliances with the Bastarnæ and the Getæ, who at this period occupied the tracts from thence to the Danube, and both these nations are said to have contributed auxiliary contingents to the forces which he brought into the field against the Romans.[4]

§ 6. Meanwhile the extension of his power towards the west

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[2] Strabo, vii. 4, § 3, p. 309. The name of the Roxolani here appears for the first time. They evidently dwelt at this period in the steppe country of Southern Russia; but Strabo himself admits that his notions of their position were very vague (vii. pp. 294, 306). The kingdom of the Bosporus, of which Panticapæum was the capital, and which is familiar to all scholars from the intimate relations with Athens maintained by its kings, Leucon and Parisades, in the days of Demosthenes, disappears from history during the intermediate period, until we find it again mentioned upon this occasion. But from the recurrence of the name there can be no doubt that this last Parisades belonged to the same dynasty with the earlier monarchs.

[3] Id. vii. pp. 306, 307, 309-312. It was during these operations that Neoptolemus was said to have defeated the barbarians in a combat of cavalry *on the ice*, on the very same spot in which he had the summer before defeated them in a naval engagement (Strabo, vii. p. 307).

[4] Appian, *Mithridat.* 69. The Iazyges, who are termed by Appian, as well as by Strabo (vii. p. 306), a Sarmatian race, also figure among these auxiliaries. This is their first appearance in history. They were at this time among the tribes north of the Euxine, apparently in the plains between the Tyras and Borysthenes, but their exact position is not clearly indicated.

and south was checked by the petty sovereignties that hemmed him in on that side, and which, though individually unable to oppose him, were supported by the power and influence of Rome.[5] It was not till B.C. 90 that he ventured, by dispossessing Nicomedes III. of his kingdom of Bithynia, and Ariobarzanes of that of Cappadocia, to provoke a collision with the great republic: and in B.C. 88 he overran, and made himself master almost without opposition of the Roman province of Asia. The operations of the war that followed (B.C. 88–84) were however confined to Greece and the nearer parts of Asia Minor, and have therefore little geographical interest: it was not till the war was renewed in B.C. 74, and Lucullus was appointed to the command, that they assumed a different character. That general indeed proceeded at first with great care and caution, and when after defeating Mithridates before Cyzicus, he followed him into his own dominions, he was delayed for a considerable time by the protracted siege of Amisus. It was not till the spring of B.C. 72 that he attacked Mithridates himself in his head-quarters at Cabeira, and defeated him in a great battle which compelled him at once to seek refuge in the dominions of his son-in-law Tigranes, king of Armenia.[6]

§ 7. That monarch had on his part become the founder of a power that for the moment appeared to rival, if not to surpass, that of Mithridates himself. Beginning only as the ruler of the cold and barren highlands of Armenia, he had successively annexed several of the neighbouring provinces, including Sophene, Atropatene, and Gordyene—the last of which he had

[5] At the time when Mithridates VI. ascended the throne, the dominions of Rome in Asia Minor comprised, besides what they termed the province of Asia, Phrygia, Lycaonia, and Cilicia Trachea. Cappadocia and Bithynia were still ruled by independent monarchs, as was Paphlagonia also, but the petty dynasts of that country held only the interior—the kings of Pontus having already extended their dominion over the sea-coast as far as the confines of Bithynia, including the flourishing city of Sinope, which under Mithridates became the capital of his kingdom. The Galatians, who had been settled in Asia since the time of Attalus I. of Pergamus, still maintained their independence under their native rulers.

[6] For the history of this war see Appian (*Mithridatica*, 71–83), and Plutarch (*Lucull.* 7–24).

wrested from the Parthian kings: and had afterwards taken advantage of the divided state of the Syrian monarchy, to overrun the whole of the provinces that still remained subject to the Seleucidan kings, from the Euphrates to the sea, together with the northern part of Mesopotamia. After the fashion of so many oriental kings, he had sought to immortalize himself by the foundation of a new capital, to which he gave the name of Tigranocerta, and which he peopled in great measure with captives carried off from his new conquests, including many Greeks from the cities of Cilicia and Cappadocia.[7] As soon therefore as the Armenian monarch had decided to espouse the cause of Mithridates, and declared war against Rome, Lucullus determined at once to strike a blow at the heart of his dominions, by marching direct upon Tigranocerta.

In order to effect this he had to cross the Euphrates—which was now for the first time passed by the Roman arms—as well as the rugged chain of Mount Taurus: but all these obstacles were successfully surmounted: and Lucullus, advancing through Sophene,[8] and crossing the Tigris in the upper part of its course, appeared before Tigranocerta, and laid siege to that city before Tigranes had completed his preparations for defence, or Mithridates had arrived to support him. The Armenian monarch in vain endeavoured to avert the fall of his capital: he was defeated in a great battle, Tigranocerta was taken; and after halting for some time in Gordyene, Lucullus advanced northwards with the view of penetrating into the heart of Armenia itself. He was again encountered by the combined forces of Mithridates and Tigranes at the passage of the river Arsanias, where he again defeated them with great slaughter. But when he wished to follow up his advantage by pushing on at once to Artaxata, the ancient capital of Armenia, the discontent of his troops compelled him

[7] Appian, *Mithridat.* c. 67; Plut. *Lucull.* 21, 26; Strabo, xii. 2, p. 539. See Note C, p. 104.

[8] Sophene was the district bounded by the Euphrates on the west, by the Murad Chai on the north, and extending on the east to beyond the western source of the Tigris. Its name is mentioned for the first time on this occasion.

to abandon the idea, and to return southwards across the Taurus, where he laid siege to Nisibis in Mygdonia, as the Greeks now called the north-eastern district of Mesopotamia.[9] The reduction of this important fortress was the last of the brilliant exploits of Lucullus: the discontent and mutinous disposition of his troops not only prevented him from following up his successes in the ensuing summer, but compelled him to retreat into Pontus, and remain there in a state of inactivity, while Mithridates, supported by Tigranes, recovered a great part of his former dominions.[1]

§ 8. These campaigns of Lucullus in Asia derive a special interest from their being the first occasion on which the Roman arms were carried across the Taurus into the regions adjoining the Euphrates and the Tigris, which subsequently became for so long a period the constant battle-field between them and their Oriental neighbours the Parthians and Persians. They were also the first to bring either Greeks or Romans into somewhat closer acquaintance with the upland regions of Armenia, a cold and dreary tract, concerning which we have scarcely any information since it was traversed by Xenophon and the Ten Thousand in their marvellous retreat from the banks of the Tigris to the Euxine.[2] Unfortunately our accounts of these operations are extremely imperfect: neither Plutarch nor Appian, from whom our information is principally derived, troubled themselves much with the geography of the countries in question, and several of the leading points are subject to much doubt. Even the position of Tigranocerta cannot be considered as satisfactorily determined[3]: and the river Arsanias must be included in the same category.[4] Talaura also, a mountain fortress of Mithridates, where he deposited a great

[9] The name was given to it (as we are expressly told by Strabo (xvi. 1, p. 747), by the Macedonians, evidently with reference to the region of the same name in Macedonia, but its origin is not explained.

Nisibis, which afterwards played so important a part in the wars between the Romans and Parthians, here appears in history for the first time.

[1] Appian, *Mithridat.* 84–91; Plut. *Lucull.* 24–33.

[2] Xenophon, *Anab.* iv. See Chapter X, p. 351.

[3] See Note C, p. 104.

[4] See Note D, p. 105.

part of his treasures,[5] has not yet been identified. Artaxata, the former capital of Armenia, which was reported, by a very strange tradition, to have been founded by Hannibal,[6] was situated in the valley of the Araxes, about 15 miles below Erivan. It probably became again the capital of Tigranes, when he was compelled by Pompey to withdraw within his original frontiers, and still retained that dignity down to a later period.

§ 9. When Pompey succeeded Lucullus in the command, B.C. 66, he found that Mithridates had recovered the greater part of his original dominions, while Tigranes also had reoccupied Armenia Minor and great part of Cappadocia. But the movements of the Roman general were rapid and decisive. He quickly defeated Mithridates, drove him out of Pontus, and compelled him to take refuge in Colchis, while he himself struck into the heart of Armenia and was advancing directly upon Artaxata, when he was met by Tigranes, who laid his tiara at his feet, and purchased favourable terms of peace by this abject submission. He was, in consequence, left in possession of Armenia Proper, while the provinces of Sophene and Gordyene were erected into a separate principality for his son. Pompey next advanced northwards in pursuit of Mithridates, passed the river Cyrus or Kur, and defeated in succession the two warlike nations of the Albanians and Iberians, who had sought to oppose his progress in arms. Both these tribes appear on this occasion for the first time in history: they had in all probability hitherto maintained a wild independence in their mountain homes, without acknowledging the rule either of the Persian or the Macedonian kings. The Iberians occupied the upper valley of the Kur, and the mountain slopes that separated it from the basin of the Euxine, while the Albanians held the lower valley of the same river, and the mountain tract from the foot of the Caucasus to the shores of the Caspian.[7] Pompey himself was desirous, after defeating the army of the Albanians, to have penetrated in person as far as the Caspian Sea, and actually advanced within

[5] Appian, *Mithridat.* 115. [6] Strabo, xi. p. 528; Plut. *Lucull.* 31.
[7] Plut. *Pomp.* 34.

three days' march of its shores; but was deterred, we are told, by the number of venomous reptiles he encountered,[8] an idle tale evidently got up by the natives.[9]

§ 10. Meanwhile Mithridates had effected his retreat in safety to the Bosporus. After wintering at Dioscurias—the extreme limit of Greek civilization in this quarter—he had forced his way at the head of an army all along the eastern coast of the Euxine, from thence to Phanagoria on the Asiatic shore of the Bosporus—a march of unprecedented difficulty, both from the rugged and mountainous character of the country and the warlike and lawless disposition of the inhabitants. The whole of this tract between the Caucasus and the Euxine was occupied by a number of wild tribes, speaking different dialects, and regarded by the Greeks as different nations, to whom they gave the appellations (evidently much modified to suit a Greek ear) of Heniochi, Zygi, and Achæi.[1] With some of these different tribes, Mithridates had already entertained relations, partly of a peaceable, partly of a hostile character; and on the present occasion also he appears to have effected his passage in part by negotiation and the influence of his name, as well as by force of arms.[2] But under all circumstances the accomplishment of this march of more than 300 miles through a country that presented the greatest natural difficulties, and that had never previously been traversed by an army, is certainly one of the exploits that redounds the most to the credit of the Pontic king.

Pompey did not attempt to pursue the fugitive monarch beyond the Phasis; and contented himself with sending his fleet to watch his proceedings at the Bosporus, while he himself proceeded southwards to complete the subjugation of Syria. It

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[8] Plut. *Pomp.* 36.

[9] It is curious to find that the same fable is still current in this neighbourhood, and is gravely repeated by an intelligent German traveller, who was assured that the Mughan Steppe (between the lower course of the Araxes and the Caspian) was wholly impassable in summer from the multitudes of serpents with which it swarmed. (Kohl, *Reisen in Süd-Russland.* vol. ii. p. 170. See the remarks of Petzholdt, *Der Kaukasus*, vol. i. p. 198.)

[1] Strab. xi. p. 497.

[2] Appian, *Mithridat.* c. 102; Strab. xi. p. 496.

was on this occasion that for the first time he carried the Roman arms into Judæa, and entered Jerusalem at the head of an army, B.C. 63. Before that time it was probably very little known to the Romans. He appears to have considered that no further danger was to be apprehended from Mithridates, who had been driven to the shores of the Palus Mæotis, while it would be a difficult and hazardous enterprise to attempt to follow him into these remote regions. The aged monarch was, however, very far from being disposed to acquiesce in his defeat, and after having established himself at Panticapæum, which still continued to be the chief centre of civilization and trade in these parts, and confirmed his power over the surrounding districts, he began to extend and strengthen the alliances which he had already formed with the Scythian and other tribes that occupied the steppes extending from the shores of the Borysthenes to those of the Danube. His object was to combine these various nations, including the Bastarnæ and the Getæ, as well as the Gaulish tribes, who were at this time settled between the Danube and the Adriatic, the Scordiscans, Boians,[3] &c., into one great mass, and putting himself at their head to cross the Alps and throw himself at once upon Italy, where he conceived the Romans to be still the most vulnerable. But this gigantic scheme was nipped in the bud by the defection of his own troops, as well as of the recently annexed Greek cities. His son Pharnaces put himself at the head of the revolt, and Mithridates was compelled to put an end to his own life (B.C. 63). With him perished all his projects, and we hear little of any incursions of the barbarians from this quarter until a much later period.[4]

§ 11. On the side of the Danube indeed the Roman arms had made but little progress, though the successive Roman generals who were appointed to the province of Macedonia repeatedly endeavoured to earn the distinction of a triumph by hostilities against the barbarians that adjoined them on the north. It has

[3] See Note E, p. 105.

[4] Appian, *Mithridat.* 107–111.

been already stated, that C. Scribonius Curio in B.C. 75 was the first Roman general who penetrated to the banks of the great river. But he appears to have merely made a hasty expedition thither and returned. The nation over whom he celebrated a triumph was the Dardanians, who at this period appear to have held the mountain tract at the head of the valley of the Morava, on the confines of Mœsia and Illyricum. His successor, M. Lucullus (the brother of the conqueror of Mithridates), turned his arms against the Bessi, a Thracian tribe who occupied the mountain range of Hæmus (the Balkan) and the upper valley of the Hebrus, and after subduing them, overran the open country of Mœsia, as far as the right bank of the Danube. He did not indeed attempt to secure the possession of this region, which was not reduced to the form of a Roman province until long after; but turned his arms against the Greek cities on the shores of the Euxine, and took or reduced to submission Tomi, Istrus, Odessus, Callatia, Mesembria, and Apollonia.[5] For these successes he was rewarded with a triumph on his return to Rome in B.C. 71. But no real progress was made at this period towards the subjugation of any of the tribes north of Mount Hæmus; while these continual petty wars tended to keep up a feeling of irritation and hostility towards the Romans among the barbarians adjoining their northern frontier, of which the design of Mithridates was ably conceived to take advantage.

§ 12. Both Lucullus and Pompey had entered more or less into relations, partly hostile, partly amicable, with the king of Parthia, and Lucullus is even said to have at one time meditated turning his arms against that monarch, leaving

[5] Appian, *Illyr.* c. 30; Eutrop. vi. 10. But there is much confusion in the lists of these towns. Appian distinctly states that there were *six* of them; and proceeds to enumerate Istrus, Dionysopolis, Odessus, Mesembria, Callatis, and Apollonia. (The text is corrupt, but the two last names may be safely restored.) Eutropius, on the other hand, gives Apollonia, Callatis, Parthenopolis (a name otherwise unknown), Tomi, Histrus, and Burziona, evidently the Bizone of Strabo (vii. 6, p. 319), but an obscure town. I have chosen the six most important names; but there is no reason to doubt that he captured the smaller towns also. Apollonia alone was destroyed; the others were probably admitted to favourable terms.

Mithridates and Tigranes to themselves.[6] Plutarch indeed does not hesitate to ascribe to that general the blame of the subsequent disasters of the Roman arms in this quarter; it being, as he asserts, the trophies erected by him in Armenia close to the Parthian frontier, and the capture of Tigranocerta and Nisibis, that excited Crassus to emulate his glory by assailing the Parthians themselves.[7] But it is certain that from the time that Syria was reduced to a Roman province, and their frontier was thus carried to the Euphrates, the outbreak of hostilities between the two powers became inevitable. The Parthians at this time held the whole of Mesopotamia, up to the frontiers of Armenia, having recovered possession of the districts of which they had been deprived by Tigranes.

§ 13. The ill-fated expedition of Crassus (B.C. 53) was not calculated to throw any light upon the geography of these regions, and our knowledge of its details is, as usual, during this period of Roman history, very scanty and imperfect. It is certain however that he crossed the Euphrates at the point known as the Zeugma,[8] nearly opposite the modern Bir, where a bridge of boats had been permanently established by the Seleucidan kings, in consequence of which it appears to have already become the customary place of passing the river, instead of Thapsacus.[9] From hence he might either have advanced through the north of Mesopotamia, by Edessa and Nisibis, keeping near to Mount Masius on his left, till he reached the Tigris, and then descended the left bank of that river, or he might at once have descended the valley of the Euphrates (as the younger Cyrus had done), keeping the river on his right, so as to secure him supplies of provisions. Instead of adopting either of these courses he appears to have taken an intermediate line, and marched through the open plains of Mesopotamia where his troops suffered severely from heat and

[6] Plut. *Lucull.* c. 30.
[7] Id. *ibid.* c. 36.
[8] Dion Cass. xl. 17. His statement of this fact may be received without question, though he erroneously supposes it to have been the same place where Alexander had crossed the Euphrates. See the next note.
[9] See Note F, p. 106.

drought. He did not however advance many days' march before his progress was arrested by the Parthian army; and it seems probable that the Roman historians exaggerated the natural difficulties that he met with, in order in some degree to extenuate his disaster. The farthest point that he reached was a river, called by Plutarch the Balissus,[1] which must in all probability be the same as that called by other writers, the Beliche, or Balichas, and still known by the name of Nahr Belik, which falls into the Euphrates near Rakka. It was here that his first defeat took place, and that his son was killed;[2] after which he fell back upon Carrhæ, a fortified town that was at this time held by a Roman garrison. Of the site of this place, which was the scene of his final disaster and death, there is no doubt; it is still called Haran, and is situated about 60 miles from Bir, where Crassus crossed the Euphrates.[3] The statement of Plutarch that when Crassus set out on this ill-omened expedition, he looked forward not only to the total defeat of the Parthians, but to carrying his arms beyond their frontiers "to the Bactrians and Indians *and the external ocean*"[4] shows the fixed impression that that sea was to be found immediately beyond the two nations in question.

SECTION 7.—*Posidonius.*

§ 1. Contemporary with the events which we have been passing in review, was an author, who though, like Hipparchus, he did not compose any strictly geographical treatise,

[1] Plut. *Crass.* 23.

[2] This first battle seems to have been fought in the neighbourhood of a place called Ichnæ, which we know from Isidore of Charax to have been situated on the river Balichas (the Belik), only 5 schœni (150 stadia) from Nicephorium on the Euphrates (Isidor. *Mans. Parth.* § 1).

[3] Plut. *Crass.* 27–31; Dion Cass. l. 25–27; Oros. vi. 13. The defeat and death of Crassus are mentioned by all these writers in connection with Carrhæ; but the spot where he was finally surrounded and slain, was near a place called Sinnaca, situated on the heights bordering the plain of Mygdonia. Crassus himself, with the remains of his army had broken up from before Carrhæ with the view of gaining these heights, when he was intercepted by the treachery of Surenas. (Plut. *Crass.* c. 29; Strabo, xvi. 1, § 23, p. 747.)

[4] Id. *ibid.* c. 16.

yet exercised considerable influence upon the progress of geographical science, and whose writings are among those most frequently referred to by Strabo, either as authorities, or for the purpose of criticism. This was POSIDONIUS, a philosopher of the Stoic school, who was born at Apamea in Syria about the year B.C. 135, and became the successor of Panætius at Rhodes, where he enjoyed the reputation of being one of the most distinguished philosophers of his day, and formed friendly relations both with Cicero and Pompey. He was sent ambassador to Rome on the part of the Rhodians, during the last illness of Marius, B.C. 86; and visited that city again for the last time in B.C. 51, when he was not less than 84 years of age.[5] Besides several works of a purely philosophical character, he left a great historical work in not less than 52 books, forming a continuation of that of Polybius, and extending to the end of the Mithridatic Wars, of the whole course of which he had been himself a contemporary witness. This history, like that of Polybius, appears to have contained many notices of a geographical character, accounts of the manners and customs of the various nations mentioned, and observations on physical phenomena, which were in some instances at least the result of his own experience, as he had travelled extensively, and visited in person the coasts of Spain, Gaul, and Liguria.[6] His only work that was more specially connected with geography was one "On the Ocean;" in which he appears to have treated fully—as was indeed almost inevitable in connexion with such a subject—of the figure and dimensions of the earth, and the general principles of mathematical geography.

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[5] For the dates and facts of the life of Posidonius, see Clinton (*F. H.* vol. iii. p. 540), and the account of his life prefixed to the fragments of his works by C. Müller in his *Fragmenta Historicorum Græcorum*, vol. iii. All the extant fragments of his writings are collected by Bake (*Posidonii Rhodii Reliquiæ Doctrinæ*, 8vo. Lugd. Bat. 1810); those that have any bearing on history or geography will be found in the work of Müller already cited.

[6] The period of his life at which he travelled thus extensively is uncertain; but it was probably in his earlier years. At all events it was certainly before the publication of his historical work, in which he embodied many notices that were the result of his personal observations and inquiries.

§ 2. It was apparently in this work[7] that Posidonius introduced his new attempt to determine the circumference of the earth, which he undertook independently of that of Eratosthenes; and arrived at a widely different result. His method however like that of his predecessor was scientific and sound in theory. Having observed that the star Canopus, which from its brilliancy had attracted the especial attention of the Greeks from the time they settled in Alexandria, was only just visible on the horizon at Rhodes, while at Alexandria it rose to a height equal to a fourth part of one of the signs of the zodiac, or a forty-eighth part of a great circle; assuming moreover (as Eratosthenes had done before him) that Rhodes and Alexandria were on the same meridian, and that the interval between them was 5000 stadia, he arrived at the conclusion that this distance was a forty-eighth part of the whole meridian circle, and therefore the circumference of the earth was 240,000 stadia.[8] This conclusion did not differ very widely from that of Eratosthenes, while it was somewhat nearer to the truth. Yet it was based upon two material errors. In the first place he accepted without enquiry the rough popular estimate of 5000 stadia for the distance between Rhodes and Alexandria; though this was greatly in excess of the truth, and founded merely on the vague estimate of navigators.[9] But on the other hand his supposed observations of Canopus were grossly inaccurate, the real difference in latitude between Alexandria and Rhodes being only about 5° 15′, or less than a *sixtieth* part of a great circle, instead of a forty-eighth! It was only because these two enormous errors in great part counteracted one another that the result was apparently so fair an approximation to the truth.

Unfortunately Posidonius seems to have subsequently become aware of the error in his estimate of the distance between

[7] I say "apparently," because we are told that Posidonius wrote also a treatise περὶ κόσμου, and another περὶ μετεώρων, in either of which such a subject might well have been introduced; and Cleomedes does not mention the name of the work from which his account is taken.

[8] Cleomed. *Cycl. Theor.* i. c. 10, p. 62.

[9] See Chapter XVI. p. 639.

Rhodes and Alexandria, and adopted the reduced computation of Eratosthenes—which was itself, as we have seen, founded on *calculation*, not on *measurement*,—of 3750 stadia for the interval between the two. But as he retained his own assumption,—founded on supposed observations, but of so rude and vague a character as to give utterly erroneous results—that the difference of latitude between the two was equal to $\frac{1}{48}$ of a great circle, or $7\frac{1}{2}$ degrees, it followed that he reduced the whole circumference to only 180,000 stadia, or just three-fourths of his former computation.[1] Yet, by a strange fatality, this conclusion, the result of such a complication of errors, came to be generally accepted by the later Greek geographers in preference to that of Eratosthenes, and was even adopted by the great astronomer Ptolemy.

§ 3. While Posidonius thus reduced the supposed circumference of the globe, his estimate of the length of the "habitable world,"—which, as we have seen, was considered in his day as the only proper subject of geography—did not materially differ from that of Eratosthenes. He made it indeed somewhat less, reckoning it at about 70,000 stadia,[2] which he considered as being just about half the circumference of the globe, as measured on that circle of latitude: i.e. on the circle passing through Rhodes and the Straits of Gibraltar, along which the greatest length was always measured. Thus,

[1] Strabo, ii. 2, p. 95. It is true that the account here given of the mode by which Posidonius arrived at this second result, is mainly conjectural. For Cleomedes, to whom we are indebted for the details—perfectly clear and intelligible in themselves—of the process by which Posidonius attained his first result, of 240,000 stadia, does not say anything of his having subsequently altered it; while Strabo and other writers, who refer to him as the author of the measurement making the circumference 180,000 stadia, do not allude to his having come to any other result. The mode of reconciling the two, adopted in the text, was first suggested by Ricciolo (an Italian astronomer of the seventeenth century), who was followed by Lalande and other writers on astronomy, as well as by Gossellin; and the exact coincidence of the numbers (48 times 3750 being precisely equal to 180,000) is such as to leave hardly a doubt of its correctness (see Ukert, *Geogr.* vol. ii. p. 48).

[2] Eratosthenes, as we have seen, made it more than 77,000 stadia. But this included an addition at each end, which were probably omitted by Posidonius, who expressly called the Sacred Promontory the westernmost point of the world.

he observed, there would be only so many myriads of stadia (70,000) to be traversed by any one who, setting out from the west, with an east wind, would sail to India.[3] It is curious to find him, like Eratosthenes, again speculating on the circumnavigation of the world, and anticipating by so many centuries the project of Columbus of sailing direct from Spain to the Indies.

§ 4. On another point, which could be merely the result of speculation, we find Posidonius concurring with Eratosthenes and Polybius in assuming that the tract immediately under the equator enjoyed a milder temperature than the burning or torrid zones to the north and south of it.[4] In regard to the unity of the ocean, and the possibility of circumnavigating Africa, Posidonius also held the same view with Eratosthenes and Strabo: maintaining its theoretical possibility, but not admitting that it had been ever actually accomplished. It was in connection with this subject that he related the curious history of the voyage of Eudoxus of Cyzicus, which has been already examined.[5]

§ 5. Another subject, on which Posidonius appears to have been the first Greek writer that arrived at clear ideas, was that of the tides. For this he was indebted to his journey to Spain, where he spent some time at Gades, and from his own observations, coupled with the information he received from the natives, acquired a distinct knowledge not only of the diurnal recurrence of the tides, but of their monthly cycles of variation, which he correctly ascribed to the influence of the moon, and its different positions with regard to the sun: so that the highest tides, as he observed, always coincided with the full moon, and the lowest with the half-moon, or intermediate quarters.[6]

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[3] Ὑπονοεῖ δὲ (ὁ Ποσειδώνιος) τὸ τῆς οἰκουμένης μῆκος ἑπτά που μυριάδων σταδίων ὑπάρχον ἥμισυ εἶναι τοῦ ὅλου κύκλου καθ' ὃν εἴληπται, ὥστε, φησίν, ἀπὸ τῆς δύσεως εὔρῳ πλέων ἐν τοσαύταις μυριάσιν ἔλθοι ἂν εἰς Ἰνδούς. Strabo, ii. 3, p. 102.

[4] Posidon. Fr. 72, ed. Müller.

[5] Posidon. ap. Strab. ii. 3, p. 98. For the voyage of Eudoxus, see Chapter XVIII. p. 74.

[6] Id. ib. iii. 5, pp. 173, 174.

Posidonius, who enjoyed a high reputation as a physical philosopher, was naturally led to pay particular attention to the phenomena connected with physical geography, especially those of volcanoes, earthquakes, &c. He was the first to record the appearance of a new islet, among the Liparæan Islands, thrown up by volcanic agency, between Hiera and Euonymus: and his account of the circumstances attending the outbreak is almost precisely in accordance with those of modern observers, who have witnessed similar phenomena.[7] He was indeed strongly impressed with the changes in the earth's surface that had been produced by movements of elevation or subsidence (as they would be termed by a modern geologist) owing to earthquakes and similar causes: and even went so far as to suggest that the Atlantis of Plato might not be a mere fiction, but that an island equal to a continent in size might really have disappeared and sunk into the depths of the ocean.[8]

§ 6. It is unnecessary to refer more particularly to the numerous scattered notices that are found in Strabo, cited from Posidonius, especially in regard to Spain and Gaul, for which he appears to have been one of the principal authorities followed by the later geographer.[9] One curious statement may be mentioned, that the greatest depth of any sea *that had been measured* was that of the Sardinian Sea which was not less than 1000 fathoms.[1] He stated that tin was found in the interior of Spain, north of Lusitania, and among the Artabri,

[7] Posidon. ap. Strab. vi. p. 276. The date of this event is fixed by Pliny (*H. N.* ii. 88, § 203) to the year 126 B.C., which coincides with the expression of Posidonius, that it had occurred within his own memory.

[8] Ὅτι ἐνδέχεται καὶ μὴ πλάσμα εἶναι τὸ περὶ τῆς νήσου τῆς Ἀτλαντίδος. Strabo, ii. 3, § 6, p. 102.

[9] It was from Posidonius that Strabo derived his strange story of an island at the mouth of the Loire, inhabited by a race of women whom he calls Samnitæ, who were wholly devoted to the celebration of Bacchic rites (iv. 4, § 6, p. 198).

The same tale is repeated by Dionysius Periegetes (vv. 560–569), who writes the name Amnitæ.

[1] Posidon. ap. Strab. i. 3, § 9, p. 54. The fact is true that there is "a prodigious depth of water around Sardinia and Corsica," to use the words of Admiral Smyth (*Mediterranean*, p. 137); but that it had ever been sounded in ancient times to a depth of 1000 fathoms may well be doubted.

but was brought also from the islands of the Cassiterides and the British Islands to Massilia.[2] This is the first instance in which we find mention of the *overland* trade in tin, which was certainly an established practice in Cæsar's time: but Posidonius, who had himself visited Massilia, had doubtless acquired his information in that city.

One point on which Posidonius entertained strangely erroneous views was in regard to the distance between the Euxine and the Caspian, which he estimated at only 1500 stadia.[3] Strabo, who reckons it double this width, or 3000 stadia,[4] justly remarks that this error is the more inexcusable, as the recent campaigns of Pompey against the Iberians and Albanians had opened the way to better information concerning these countries. It is remarkable that Posidonius added, that he believed the distance from the Palus Mæotis to the Ocean was not much greater.[5] This notion of the proximity of the northern ocean to the Mæotis and the Caspian seems to have become gradually implanted in the minds of the Greek geographers at this period from their belief in the direct communication of this external sea with the Caspian. Their knowledge of the geography of these regions was too imperfect to lead them to see the necessity for a large tract of land to the north, to supply the waters of the Tanaïs and other great rivers.

In one instance Posidonius appears to have been misled by his own experience. For, having encountered contrary winds on his return voyage from Gades to Rome, and been driven about by them between the Gymnesian Islands and Sardinia and the opposite coast of Africa, so that he did not reach Italy till after a voyage of three months, he erroneously assumed that the east winds blew with the same regularity and violence in this part of the Mediterranean that the Etesian winds did in the seas more familiar to the Greeks.[6]

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[2] Posidon. ap. Strab. iii. p. 147.
[3] Ibid. xi. 1, § 5.
[4] Ibid. § 6.
[5] Ibid. § 5.
[6] Strabo, iii. 2, p. 144. It was during this voyage that he on one occasion approached near enough to the coast of Africa to observe the apes on the shore, of whose appearance and habits he gave a lively description, which is cited by Strabo (xvii. p. 827).

Posidonius appears to have been the first who compared the form of the inhabited world to that of a sling, broader in the middle and tapering at the two ends: a simile adopted by several later geographers, though conveying but little idea to a modern reader.[7]

§ 7. To the period immediately following Posidonius may probably be assigned two astronomical writers whose works have been preserved to us, though their names are otherwise unknown and their date cannot be fixed with any certainty. Of these CLEOMEDES, the author of a treatise called "The Circular Theory of the Heavenly Bodies,"[8] containing an exposition of the received views concerning the magnitude and figure of the earth, its position in the centre of the universe, and the motions of the sun, moon, and stars, expressly disclaims all pretension to originality, and says that the doctrines which it sets forth are not the opinions of the author himself, but are compiled from various writers ancient and modern, but are chiefly derived from Posidonius.[9] It is probable therefore that the little work in question is in fact an epitome of the views of Posidonius. Its principal interest arises from his having preserved to us the accounts which we have already examined of the mode of proceeding adopted by Eratosthenes and subsequently by Posidonius to determine the circumference of the earth.[1] Cleomedes, as well as Posidonius himself, belonged to the Stoic sect of philosophers, who were at this time the upholders of scientific astronomy, as opposed to the Epicureans, who adhered to the popular notions on astronomy, and ridiculed the notion that the earth was spherical and situated in the centre of the universe. Thus we find Lucretius in his well-known poem arguing strongly against the idea of the tendency of all things to a centre, which

[7] Agathemerus, i. § 2.

[8] Κυκλικὴ Θεωρία τῶν Μετεώρων, in two books. It is published by Bake, 8vo, Lugd. Bat. 1820. Concerning its author and his probable date, see Sir G. Lewis's *Hist. of Ancient Astronomy*, p. 216; and the article CLEOMEDES, in Dr. Smith's *Dict. of Biogr.* vol. i. p. 792.

[9] ii. *ad fin.*

[1] See above, p. 95, and Chapter XVI. p. 621.

had been the basis of cosmography ever since the time of Aristotle.[2]

§ 8. GEMINUS, of whom like his supposed contemporary Cleomedes nothing is known concerning his life or date, has left a work under the title of "An Introduction to the Celestial Phænomena," [3] which is in fact an elementary introduction to astronomy, very similar in its scope and character to that of Cleomedes. It is therefore in like manner of interest as embodying what were then the generally received notions concerning those cosmographical relations of the world which are necessarily connected with the general principles of geography. Both these writers may probably be placed between the time of Posidonius and that of Strabo, and the system enunciated by them is obviously the same as that which is summarized by the great geographer as generally recognized in his time by all persons who had received a liberal education.[4]

[2] Lucretius *de Rerum Natura*, i. vv. 1052–1082.

[3] Εἰσαγωγὴ εἰς τὰ Φαινομένα. It is printed by Petavius in his Uranologium. Concerning its author, see Sir G. Lewis *l. c.* and the article GEMINUS in Dr. Smith's *Dict. of Biogr.* vol. ii. p. 238.

[4] Strabo, ii. 5, § 2.

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NOTE A, p. 47.

GREEK MONARCHS OF BACTRIA.

THE researches of recent archæologists in India and the adjacent regions towards the north-west, have thrown a great deal of light upon the obscure notices which were found in ancient writers in regard to the existence of this Greek monarchy in Bactria, Ariana, and the upper valley of the Indus. They have revealed to us the names of not less than thirty monarchs, who ruled in this part of Asia, during the interval between the foundation of the monarchy, about 250 B.C., and its destruction or subjugation by the Scythian tribes: a fact recorded by Strabo (xi. 8, § 2), without any indication of its date, but which may probably be placed about 120 B.C. Unfortunately the total absence of dates upon these coins leaves their chronological arrangement in a state of hopeless uncertainty. Two points alone seem to be clearly established: it may be inferred from the purely Greek character of the names, that the descendants of the original Greek settlers continued to retain the government in their own hands till the downfall of the monarchy; and secondly, that there must frequently have been two or more contemporary sovereigns ruling at the same time in different parts of the widely-extended dominions, which were occasionally united in the hands of one powerful monarch. This is indeed sufficiently evident from the number of kings, whose existence is established by their coins, as compared with the limited period to which they can be assigned. But as soon as we attempt to trace the division in detail, and determine what kings or dynasties reigned in one province, and what in another, we are met by difficulties almost equal to those attending the chronology. The inferences drawn by the latest numismatical inquirers point to the fact, which is indeed sufficiently probable in itself, that the range of the Hindoo Koosh frequently formed the limit between two separate kingdoms, and that one Greek ruler established himself in Cabul and the Punjab, while another maintained the provinces of Bactria and Sogdiana north of the great mountain range. It appears also probable that the latter provinces were overrun by the Scythian invaders to whom Strabo refers, and their Greek rulers expelled, some time before the last Greek monarchs were dispossessed of the Punjab and the adjacent regions.

The reader who wishes for more information concerning the Greek monarchies in this part of Asia, will find the subject fully discussed by Prof. Wilson in his *Ariana Antiqua* (4to. Lond. 1841), who has brought together all that was known in his time. The results of more recent researches are embodied in a series of papers by Gen. Cunningham in the *Numismatic Chronicle* (*N. S.* vols. viii., ix., x., and xii.); and still more recently the whole subject has been examined anew by Dr. A. von Sallet in the *Zeitschrift für Numismatik*, vol. vi. pp. 165–209. But it must be confessed that these discoveries, interesting as they are to the numismatist, have contributed very little to our positive knowledge, either in a historical or geographical point of view.

NOTE B, p. 65.

MEASUREMENTS OF MEDITERRANEAN ACCORDING TO ARTEMIDORUS.

The details as given by Agathemerus for this part of the line are:—

From Myriandrus to the Cleides off Cyprus	..	1400 stadia.
thence to the promontory of Acamas	..	1300 „
to the Chelidonian Islands off Lycia	..	1300 „
to Patara in Lycia	..	800 „
to Rhodes	..	700 „
to Astypalæa across the Carpathian Sea	..	940 „
to the headland of Tænarus	..	1450 „
to Cape Pachynus in Sicily	..	3600 „
to Lilybæum	..	1520 „
to Caralis in Sardinia	..	2800 „
and thence to Gades, passing by the Gymnesian Islands	..	10,000 „

Here the large round number and the want of details show that the estimate was but a vague one.

In regard to the above numbers I have adopted the corrections proposed by C. Müller for those marked with asterisks, not that I consider them free from doubt, but the discussion of these details is of little importance: the sum total being clearly established by the agreement of the numbers as given in Pliny and Agathemerus.

NOTE C, p. 87.

TIGRANOCERTA.

The site of the capital of Tigranes has been the subject of much doubt. It was placed by D'Anville and other early writers at Sert or Sört on the Bohtan Tschai, the Centrites or eastern arm of the Tigris; but this is clearly an error arising from the apparent resemblance of name, which is a mere fallacy, the termination *certa* or *kerta* signifying merely a city (Appian, *Mithr.* 67). There are no ruins at Sört, nor does the site accord with the few particulars recorded of Tigranocerta. St. Martin, on the other hand, follows the Armenian historians, who are unanimous in identifying Tigranocerta with Amida (the modern Diarbekr), the celebrated fortress on the Tigris, which plays so conspicuous a part in the later wars of the Romans with the Persians. The same view is adopted by Mr. Ainsworth, but is open to the unanswerable objection that Lucullus is distinctly described as crossing the Tigris *before* he advanced upon Tigranocerta; and no mention of that river is found in connection with the siege of the capital (St. Martin, *Mémoires sur l'Arménie*, vol. i. p. 171–173; Ainsworth's *Travels in Asia Minor*, vol. ii. p. 361). Moreover, the manner in which the name is introduced by Pliny, who thus describes the cities of Armenia, "In majore (Armenia) Arsamosata Euphrati proximum, Tigri Carcathiocerta, in excelso autem Tigranocerta; at in campis juxta Araxem Artaxata" (*H. N.* vi. 9, § 26), certainly indicates its occupying a lofty situation, *not* on either of the great rivers. On the other hand, Tacitus, in whose time Tigranocerta retained its ancient name and was still a place of importance, places it on a river which he calls Nicephorius, and at a distance of only 37 Roman miles from Nisibis (Tacitus, *Annal.* xv. 4, 5). The latter statement is at variance with all other inferences. Perhaps the most plausible conjecture is that which identifies Tigranocerta with the city afterwards called Martyropolis, the site of which seems to be clearly fixed at a place called Meja Farkin, about 27 miles N. of the Tigris and N.E. of Diarbekr (see Kiepert's Map of Asia Minor). St. Martin identified Martyropolis with Carcathiocerta, a city described by Strabo (xi. p. 527) as the capital of Sophēne, but this may probably be sought farther westward. Strabo, however, in one passage (xvi. p. 747) distinctly places Tigranocerta in the region called

Mygdonia, south of Mount Masius; and in another (xi. p. 522), though less definitely, he affirms the same thing. In both these passages it is mentioned in connection with Nisibis. Unfortunately a third passage (xi. p. 532), where he meant to describe its position more accurately, is corrupt, and cannot be restored with any certainty. Indeed the whole comparative geography of these regions is still a mass of confusion.

NOTE D, p. 87.

RIVER ARSANIAS.

The river Arsanias, though not noticed by Strabo, is mentioned by Pliny (v. 24, § 84) as an affluent of the Euphrates, and it again played an important part in the operations of the Roman generals in Armenia against the Parthian king Vologeses (Tacit. *Annal.* xv. 15; Dion Cass. lxii. 21). But the only clue to its identification is that suggested by St. Martin, that it is the same with the Aradzani of Armenian writers, a name applied by them to the river otherwise known by its Turkish name of Murad Tchai, which is in fact the southern arm of the Euphrates, and in some respects the more important of the two. In this case the military importance of the river is fully accounted for (St. Martin, *Mém. de l'Arménie*, vol. i. pp. 52, 171). It may be observed that no Greek writer mentions the *two* arms of the Euphrates. Xenophon, where he speaks of crossing the Euphrates on his retreat through Armenia (*Anab.* iv. 5, § 2) must undoubtedly refer to the *southern* branch, or Murad Tchai: but he has no mention of the northern branch, which flows by Erzeroum. Yet it is this latter river which is *exclusively* designated under the name of Euphrates by Strabo (xi. p. 527), as well as by Pliny (v. 24, § 83).

NOTE E, p. 90.

GAULS ON THE DANUBE.

We find repeated mention in the wars of Mithridates of these Keltæ or Gauls, who are represented as bordering upon the Danube, or as situated near the head of the Adriatic. They may very

probably have been a remnant of those who invaded Greece and Macedonia after the death of Alexander, who had remained behind in Pannonia and the adjacent regions. Strabo distinctly tells us that the Boii and Scordisci, who at one period occupied this tract, from which they had been in his time expelled by the Dacians, were tribes of Celtic or Gaulish origin (vii. pp. 293, 313). He ascribes also the same origin to the Tauriscans, who occupied a part of the regions called by the Romans Noricum (Ib. p. 293). This position sufficiently explains the importance attached to their co-operation by Mithridates, in regard to his proposed invasion of Italy (see Appian, *Mithridat.* c. 119). He is not likely to have entertained any relation with the Celts of Gaul itself, in the Roman sense of the term; nor would their alliance have been of material assistance to his plans. The ethnology of these regions at this period is extremely obscure, but there seems no doubt that there existed to a considerable extent Gaulish races, intermixed with the Illyrian and Thracian tribes (Strabo, *l. c.*). All these tribes were, at a later period, included under the name of Pannonians, when the Roman province of that name was constituted; but they appear to have in reality belonged to different races, and composed a very heterogeneous assemblage.

At this period, so far as we can gather from Strabo, it would seem that the plains of Wallachia and Southern Hungary, north of the Danube, were occupied by the Getæ; while the Bastarnæ, a Sarmatian tribe, held the tract extending from the Tyras (Dniester) to the mouths of the Danube.

It is certain that Mithridates from an early period—probably as soon as he had extended his own nominal dominion as far as the Dniester—had begun to form diplomatic relations with the nations beyond that river to the west, and to raise auxiliary levies among them. Some of these were undoubtedly Gauls: and we find Bitætus, a leader of Gaulish mercenaries, in immediate attendance on Mithridates at his death, when he was called on by the fallen monarch to despatch him, on the express ground of his long and faithful services (Appian, *Mithridat.* c. 111).

NOTE F, p. 92.

ZEUGMA.

This fact is more than once mentioned by Strabo, and is essential to a clear comprehension of the geography of Mesopotamia. But unfortunately that geographer has himself fallen into error by connecting the Zeugma, which was in his day become well known as the established place of passage of the Euphrates, with that at Samosata, considerably higher up the river; hence he repeatedly designates it as the Zeugma of Commagene (*τὸ κατὰ Κομμαγηνὴν ζεῦγμα*—and in one place distinctly states that it was close to Samosata—(*Ἀπὸ Σαμοσάτων τῆς Κομμαγηνῆς ἡ πρὸς τῇ διαβάσει καὶ τῷ Ζεύγματι κεῖται*, xiv. 2, § 29, p. 664). The distance also which he gives, of 2000 stadia from Thapsacus, would agree much better with Samosata than with the other Zeugma.

But the position of the true Zeugma is fixed by the distances given by Isidorus (nearly a contemporary of Strabo) in proceeding from thence to Nicephorium on the Euphrates, as well as by that given by Strabo himself (p. 749) of 1400 stadia (140 G. miles) to the Gulf of Issus, which is very nearly correct. Pliny also gives the distance of the Zeugma from Samosata at 75 Roman miles, which is a very fair approximation.

The fact is that there appear to have been in all *three* places of passage in habitual use. 1. That at Thapsacus, which continued to be in use from the earliest ages till after the time of Alexander, but was disused long before the time of Strabo. 2. That opposite to the modern Bir, which came to be generally adopted under the Seleucidan kings, on account of its being the nearest and most direct line from their capital of Antioch, and to which the name of "the bridge" (Zeugma) came in consequence to be applied. 3. That at Samosata itself, which was apparently the customary place of passage for persons coming from Cappadocia and Asia Minor (see Strabo, xiv. p. 664). But this must always have been a circuitous and inconvenient route from Antioch.

A considerable town gradually arose at the second of these three places, which retained the name of Zeugma, and appears to have risen to importance under the Roman Empire, as numerous coins are found with this name. There had previously been a city

founded by Seleucus on the opposite bank, doubtless with a view to secure the passage of the river. This is called by Strabo Seleucia, by Isidorus Apamea, and must have occupied the site of the modern Bir, or Birehjik, which is still the habitual place of passage of caravans. (See Chesney's *Euphrates.*)

CHAPTER XIX.

CÆSAR'S WARS.

§ 1. WHILE the Roman arms were extending the dominions of the great Republic both towards the east and the west: and her subject provinces now formed an uninterrupted chain from the Euphrates to the Atlantic coasts of Spain, towards the north they were still confined within extremely narrow limits; and even the range of geographical knowledge in this direction was still surprisingly scanty. We have already marked the successive steps by which the Romans had established themselves in the south-east of Gaul,[1] and formed in that country a regular province extending from the Alps to the Cevennes and the Garonne, and northward to the Lake Lemannus (the Lake of Geneva), which marked at this period the most northerly limit of the Roman Empire.[2] Within these boundaries there can be no doubt that a strong tincture of Italian civilization was rapidly diffusing itself, as it had already done through the kindred province of Cisalpine Gaul on the other side of the Alps: Roman traders had established themselves in large numbers in the principal towns of "the province,"[3] and the two Roman colonies of Aquæ Sextiæ and Narbo became, as in so many similar cases, important centres of civilization, as well as strongholds in support of the Roman dominion. But since the subjection of the Allobroges and the annexation of Toulouse and its territory no attempt was made to extend the actual limits of the Roman territory in this direction.

[1] See Chapter XVIII. sect. 1.
[2] Cæs. *de B. G.* i. 2.
[3] Cicero, *Orat. pro M. Fonteio*, c. 1. It is singular that the name thus applied by the Romans before the time of Cæsar, of "the Province," without any further distinction, should be still retained as a proper name by the region so well known even at the present day as *Provence*.

The Senate indeed pursued to some extent the same policy as elsewhere, by entering into relations more or less friendly with the different tribes or nations bordering upon the Roman province: more especially with the two powerful tribes of the Arverni and the Ædui, both of whom were honoured with the title of allies and "friends" of the Roman people.[4] Even the German chieftain Ariovistus, who had crossed the Rhine with a numerous body of his countrymen, and established himself in the territory of the Sequani (Franche Comté) received a similar appellation.[5] But while the Roman Government could not regard with indifference the movements and political relations of the barbarian nations on its immediate frontier, it appears to have refrained from anything like active interference: a policy which was observed with unusual moderation by successive governors of the province for a period of about half a century.

During this interval however the newly established province in Gaul had been almost overwhelmed by the passing tempest caused by the invasion of the Cimbri and Teutones—a movement which for a time was sufficient to strike terror into the hearts of the Romans themselves. Whatever may have been the original abodes or ethnic relations of these two allied nations—a question upon which there is much difference of statement among ancient writers, and equal diversity of opinion among modern ethnographers[6]—there can be no doubt that they invaded the Roman province from the north, in conjunction with the Helvetians and Ambrones—both of them undoubtedly Gaulish tribes: and after defeating successive Roman consuls, who had in vain endeavoured to stem the tide of invasion, they poured like a flood over the province from the Alps to the Pyrenees. But this formidable inroad, like many similar irruptions of the northern barbarians under the Roman Empire, seems to have swept over the country

[4] Cæs. *de B.G.* i. 33, 43. Tacit. *Annal.* xi. 25. [5] Cæs. *B.G.* i. 43.
[6] See Latham's *Germania of Tacitus*, p. 133.

without leaving any permanent traces: and after the great defeat of the Teutones by Marius in the plains near Aquæ Sextiæ (B.C. 102), the Roman province appears to have speedily relapsed into a state of tranquillity.

§ 2. The whole aspect of affairs was altered by the appointment of Cæsar in B.C. 59 to the government of Transalpine Gaul, which he for the first time combined with that of the Cisalpine province of the same name.[7] His object in accepting the command was undoubtedly to rival the fame which Pompey had earned by his successes in the East, and he made no secret of his intention to reduce the whole of Gaul under the dominion of Rome.[8] In the course of nine years that he remained in command, B.C. 58–50, he carried on hostilities, either in person or by his lieutenants, in almost every part of the country, from the Rhone to the coast of Brittany, and from the Pyrenees to the mouths of the Rhine; and when he finally quitted the province to carry on the Civil War, he could fairly boast of having reduced the whole of Transalpine Gaul to a state of subjection as complete as that in which he found the original Roman province.

The first occasion for the exercise of his arms was furnished him by one of those national movements that appear to have been so common alike among the Gaulish and German races. The Helvetians, who had previously taken part in the great invasion of the Cimbri and Teutones, had determined to emigrate in a mass from the abodes they then occupied, with a view to establishing themselves in a more fertile region in the west of Gaul. Their superiority in arms to the greater part of the Gaulish tribes was an acknowledged fact, due, according to Cæsar, to the continual wars with the neighbouring Germans,

[7] The provinces of Cisalpine Gaul and Illyricum had been in the first instance conferred upon Cæsar by the people, for a term of five years, at the instigation of the tribune Vatinius, to which the senate afterwards added Transalpine Gaul also.

[8] This is distinctly stated by Cicero, in his oration *De Provinciis Consularibus*, held as early as the spring of B.C. 56. "C. Cæsaris longe aliam video fuisse rationem. Non enim sibi solum cum iis, quos jam armatos contra populum Romanum videbat, bellandum esse duxit, sed totam Galliam in nostram ditionem esse redigendam," c. 13, § 32.

in which they were involved by their exposed situation in immediate proximity with those formidable warriors.[9] Counting on this superiority and on the terror of their name, they had hoped to traverse the central districts of Gaul with little difficulty. But the intervention of Cæsar completely changed the state of the case. He fell upon their rear-guard as they were passing the Arar (Saône), and cut to pieces a large number of them, belonging to the tribe or *pagus* of the Tigurini.[1] Following up the march of the main body, he pursued them through the land of the Æduans, defeated them a second time in the neighbourhood of Bibracte, and completed their destruction within the borders of the Lingones, where the remnant of this formidable host was compelled to surrender at discretion.

This first campaign is memorable not only for the ability and boldness with which Cæsar pushed forward into the heart of Gaul, to a distance of more than 150 miles from the frontier of the Roman province; but still more from the picture it presents to us, by an eye-witness and an observer of first-rate intelligence, of one of those great national movements, such as we read of in earlier times among the Gauls, and which became so frequent among the German and Slavonian nations before the close of the Roman Empire. The Helvetians left home (according to documents found in their camp and cited by Cæsar) to the number of 368,000 souls, including men, women and children. Less than a third of these (about 110,000) returned to their native country after their final

[9] Cæs. *B. G.* i. 1.

[1] The Helvetians were at this time divided into four principal *pagi* or cantons, of which the Tigurini were one; another, the pagus Verbigenus, is also mentioned by Cæsar (*B. G.* i. 27); the names of the other two are unknown, but the hypothesis adopted by Walckenaer (*Géogr. des Gaules*, vol. i. p. 311), and favoured by Dr. Long, that they were the tribes mentioned by Strabo (iv. p. 183, vii. p. 293), under the names of the Ambrones and Toügeni or Tugeni, as taking part in the invasion of the Cimbri, is certainly plausible enough. Both names subsequently disappear from history.

The neighbouring tribes of the Rauraci, Boii, Tulingi, and Latovici joined the Helvetians in this movement, but are expressly distinguished from them (ibid. v. 29). Of these the Rauraci certainly dwelt in the neighbourhood of Basle: the Boii came from Noricum (Cæs. *l. c.*); the other two are unknown.

defeat.[2] Yet their chiefs appear to have found no difficulty in moving this unwieldy mass across a large part of Gaul, and had it not been for the intervention of Cæsar, there is no reason to doubt that they would have successfully effected their original project of a national emigration.

§ 3. Cæsar's second campaign (in the same year with the preceding, B.C. 58) brought him in contact with a still more formidable enemy. For some time previously to his arrival the Gauls had suffered severely from the incursions of the German tribes beyond the Rhine: and one of these German leaders, a chieftain named Ariovistus,[3] had succeeded in establishing himself in possession of a large portion of the territory of the Sequani, while fresh swarms of invaders had either already crossed the Rhine, or were assembling on its banks with a view to occupy the more fertile and better cultivated lands on the other side of it. In this state of things the Gaulish chiefs implored the succour of Cæsar, who immediately took advantage of the opening: and after a fruitless pretence of negotiation, attacked and defeated Ariovistus in the plains of Upper Alsace, about 50 miles from the Rhine.[4] The slaughter was immense; the remains of the German army were driven across the river; and for some time all attempts on their part to recross it in this direction were effectually checked.[5]

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[2] Cæs. *B. G.* i. 29. The statement that only 92,000 of the original emigrants—just a fourth of the whole—were capable of bearing arms, shows how large a proportion of women and children took part in a migratory movement of this character.

[3] Ariovistus is called by some modern writers, king of the Suevi, but he is never so termed by Cæsar, who styles him simply a "king of the Germans" (rex Germanorum, *B. G.* i. 31). The forces under his command were a mixed multitude from a number of German tribes, who appear to have flocked around his standard for the sake of gain. The enumeration of these tribes in c. 51 does not seem to imply that the Suevi were in any predominant numbers.

[4] The site of this battle cannot be determined with any precision. The statement that the routed Germans fled from the field for about fifty miles to the banks of the Rhine (c. 53 extr.), does not prove that this was the *shortest* distance to that river. But it renders it improbable that it was fought so near the Rhine as the site between Mülhausen and Thann which is fixed upon by the Emperor Napoleon (*Histoire de Jules César*, vol. ii. p. 86).

[5] Cæs. *B. G.* i. 37–54.

The political consequences of this victory were immense. It may be said to have practically decided for centuries the question whether Gaul should become a Roman province or be subjected to its German neighbours. It is at the same time interesting to the geographer as the first occasion on which a Roman army ever came in sight of the Rhine—that great river that was to form for so long a period the much contested barrier between them and the barbarians.

§ 4. The campaigns of the following year (B.C. 57) were spread over a much wider field. After the close of his operations in the preceding year Cæsar had established the winter quarters of his legions in the land of the Sequani, instead of withdrawing them within the limits of the Roman province: a step which was justly regarded by the Gauls as a sign of his intention to subdue the whole country.[6] The consequence was that all the tribes of the Belgæ, who at this period occupied the whole region north of the Seine and Marne, combined together to expel the Roman intruders.[7] The Remi alone adhered to the Roman cause, and with the assistance of the intelligence furnished by them, and the support in arms of the Æduans, Cæsar was able to carry the war at once into the enemy's territory. He crossed the river Axona (Aisne), defeated the combined forces of the Belgians who had attacked his camp, reduced in succession the Suessiones, Bellovaci and Ambiani; and followed up his advantage by a decisive defeat of the Nervii, the most formidable and warlike of all the Belgian tribes. The Aduatuci, who occupied the country about the confluence of the Sambre and Meuse, were the last to oppose the Roman general in arms, but their capital city or stronghold was taken after a short siege, and its fall was followed by the submission of all the remaining Belgian tribes.

While Cæsar himself was thus engaged in the north of Gaul, he had detached P. Crassus with a single legion to the

[6] Cæs. *B. G.* ii. 1.

[7] See Note A, p. 135.

regions bordering on the Western Ocean. His lieutenant was apparently favourably received, and was able to announce the submission and friendly disposition of the tribes known to the Gauls by the name of Armoricans, who occupied Brittany and the west of Normandy. These comprised the Veneti, Osismii, Curiosolitæ, Unelli, Esuvii, Aulerci and Redones. The nations along the course of the Loire, the Namnetes, Andes, Turones, and Carnutes were equally favourable: P. Crassus took up his winter quarters among the Andes,[8] while other legions were stationed among the Turones and Carnutes, and Cæsar himself repaired to Italy for the winter in the belief that the whole of Gaul was effectually subdued.[9]

A few months sufficed to show the futility of this confidence. Already before the middle of the winter Servius Galba, who had been dispatched with a single legion to keep in order the Alpine tribes in the upper valley of the Rhone—the Nantuates, Veragri and Seduni, was attacked in his winter quarters, and though he repulsed the assailants with loss, he was compelled to abandon the intention of wintering at Octodurus (Martigny) where he had first taken up his quarters, and descend into the more tranquil regions on the Lake of Geneva. The object of Cæsar in posting one of his legions in these mountain regions was to secure the passage of the Pennine Alps (the Great St. Bernard)—a pass which was already frequented by traders, though exposed to many dangers and subject to heavy exactions from the tribes who occupied it.[1] This purpose was for the time wholly frustrated: and we hear nothing of its resumption by Cæsar during his Gaulish wars.

§ 5. In the following spring, B.C. 56, a much more formidable danger arose among the Armorican tribes in the north-west of Gaul, which had been lately reduced to submission by P. Crassus.

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[8] It was doubtless on this occasion that P. Crassus collected the information concerning the Cassiterides or Tin Islands, which is referred to by Strabo (iii. 5, § 11).

[9] Cæs. *B. G.* ii. 35.

[1] "Causa mittendi fuit, quod iter per Alpes, quo magno cum periculo, magnisque cum portoriis mercatores ire consuerant, patefieri volebat" (*B. G.* iii. 1).

These tribes, finding that what the Romans aimed at was not merely nominal submission, but real subjection, conspired together with the view of expelling the invader. They were essentially a maritime people, especially the Veneti, who held the chief control over the neighbouring seas, having many ships of large size, with which they traded to Britain, and by the habit they had acquired of navigating these stormy seas, had attained a complete monopoly of the commerce of the adjoining regions.[2] With them were united the auxiliary squadrons of the other Armorican states already alluded to; but besides these they obtained assistance from the more distant Morini and Menapii, and drew succours from the opposite island of Britain—the name of which here appears for the first time in Roman history.[3]

The war was long protracted and laborious; principally owing to the nature of the country, which is admirably described by Cæsar. The land of the Veneti—the present department of the Morbihan—was low and rocky, intersected by shallow inlets of the sea, on the promontories and tongues of land between which their towns were situated, in positions almost inaccessible by land, and difficult of approach by sea on account of the shoals and rocks, and rapid alternations of the tides, to which the Romans were little accustomed. It was not till towards the end of the summer that Cæsar was able to assemble a fleet capable of coping with that of the Veneti and their allies, who were able to put to sea with not less than 220 ships, fully manned and equipped, and far superior in size and strength to those that the Romans could bring against them.[4] The account given by Cæsar of the ships used by the Veneti is remarkable, and shows an advance in navigation far beyond that usually ascribed to these semi-barbarous nations. They were of large size, rising so high out of the water that the Romans could hardly assail them with missiles, and even when they raised turrets on their galleys these did not equal

[2] Cæs. *B. G.* iii. 8. [3] Ibid. iii. 9. [4] Ibid. iii. 14.

in height the poops of the Gaulish ships. At the same time they were built wholly of solid oak, so that the beaks of the galleys made very little impression upon them. Their sails were made of hides or leather to withstand the violence of the gales in these seas, and their anchors were fastened with chains instead of cables.[5] The Roman fleet was composed in part of long ships or galleys built in the Loire expressly for the occasion, partly of vessels furnished by the Gaulish tribes, of the Pictones and Santones who adhered to the Roman alliance.[6] But the courage and skill of Decimus Brutus, who commanded it, triumphed over all the advantages of the enemy, and he defeated the allied fleet in a decisive action with such loss, that it was immediately followed by the submission of the Veneti and of all their maritime allies.

The other operations of the year were of comparatively little importance. But while Cæsar was engaged in the war with the Armoricans, his lieutenant P. Crassus had reduced to subjection almost the whole of Aquitania, extending—as the term is used by Cæsar—from the Garonne to the Pyrenees. A few mountain tribes alone remained in arms, whom he was deterred by the lateness of the season from following into their rugged fastnesses.[7] Cæsar himself before the close of the season made an expedition against the distant nations of the Morini and the Menapii, who had made no signs of submission, but they retreated before his approach into the vast forests and marshes with which their country was almost wholly covered, into which he found it impracticable to pursue them.[8]

§ 6. At the close of this third year's campaign, as remarked by Dr. Merivale, "the only members of the Gaulish race who retained their liberty were the mountain tribes of the Pyrenees and the amphibious wanderers of the Waal and the Scheldt."[9] But Cæsar did not want employment for his legions, and the campaign of the following year (B.C. 55) was

[5] Cæsar, *B. G.* iii. 13, 14.
[6] Ibid. 9, 11.
[7] Ibid. 20–27.
[8] Ibid. 28, 29.
[9] *History of Rome*, vol. i. p. 358.

rendered memorable as the first occasion on which the Roman arms were carried across the Rhine into Germany, and across the sea into Britain.

The occasion for the former enterprise was furnished in the first instance by the Germans themselves. The Usipetes and Tencteri, two German tribes that had occupied a territory on the right bank of the Rhine, in the lower part of its course,[1] finding themselves hard pressed by the powerful nation of the Suevi, who were gradually extending themselves to the west, and subduing or expelling all the tribes that lay between them and the Rhine, had crossed that river and established themselves in the territory of the Menapii. Hence they spread without difficulty into the adjoining regions, and were extending their incursions on every side when Cæsar arrived in that part of Gaul, and after a brief negotiation attacked and defeated them between the Meuse and the Rhine, driving them with great slaughter into the one river or the other. But a large body of their cavalry succeeded in making their escape across the Rhine, and took refuge in the land of the Sugambri,[2] who made common cause with the fugitives, and refused the demands of Cæsar to deliver them up, alleging that the Romans had no right to interfere beyond the Rhine. At the same time the Ubians, the only people on the right bank of that river who had entered into friendly relations with Rome, entreated Cæsar to cross the Rhine with a view to strike terror into the Suevi and their allies. He in consequence constructed a bridge across the river—a work which was accomplished with marvellous celerity, being completed within ten days from its first commencement[3]—and passed it with his

[1] Cæs. *B. G.* iv. 1. Both these names here appear for the first time, but are afterwards repeatedly mentioned during the wars of the Romans with the Germans. They were on this occasion effectually driven out of Gaul, and never again crossed the Rhine.

[2] See note to next page.

[3] *B. G.* iv. 18. The exact place where Cæsar constructed this celebrated bridge cannot be determined, but it *may* be fixed within definite limits. The history of the campaign, combined with the natural geography of the country, and the course of the river, leave no doubt that it must be placed between Coblentz and Andernach, probably in the neighbourhood of Neuwied (see Ukert, *Germania*, p. 18, note).

whole army. But the Suevi and Sugambri, on the first intelligence of the construction of the bridge, had withdrawn into the interior of the vast forests with which their territories abounded. Thither Cæsar did not think fit to follow them, and after laying waste the lands of the Sugambri near the river he contented himself with this demonstration, and recrossed the bridge, after having spent only eighteen days on German soil.[4]

§ 7. He had previously made up his mind to undertake an expedition against Britain; an enterprise to which he was probably urged more by the desire of the fame to be earned by being the first Roman general to set foot in that remote and little-known island, than by any hope of real advantage. The summer was indeed so far advanced that he could not look for any great results, and he took with him only two legions, intending this first expedition, if we may trust his own account, rather as a mere *reconnaissance* than as a serious invasion. Sailing from the Portus Itius, a seaport on the coast of the Morini,[5] which afforded the shortest passage into the island, he crossed the Straits of Dover, and succeeded in effecting a landing in the face of the enemy, probably in the neighbourhood of Deal.[6] But he scarcely penetrated at all into the interior, his cavalry, which had sailed from a different port, having failed in accomplishing their passage, while his fleet suffered severely from a storm, accompanied by the unwonted phenomenon of spring tides. Under these circumstances he determined to return to the mainland; and contented himself with repulsing an attack of the Britons on his camp, which was followed by a pretence of submission on the part of some of the neighbouring tribes.

§ 8. The very imperfect success of this first attempt only stimulated him to make greater efforts in the following spring

[4] Ibid. 19. This is the first occasion on which the Sugambri or Sicambri, the name of whom was afterwards so familiar to the Romans—the "cæde gaudentes Sicambri" of Horace—appear in history. They dwelt at this period on the right bank of the Rhine, north of the Ubii.

[5] See Note B, p. 136.

[6] See Note C, p. 137.

(B.C. 54). He caused a large number of ships to be built for the express purpose of the invasion, and assembled not less than 600 such vessels, besides 28 ships of war.[7] With this great fleet, on board of which he carried five complete legions and 2000 cavalry,[8] he effected the passage of the Straits without any loss, and landed at the same place as the year before, but this time without opposition, the natives having withdrawn into the interior at the sight of so formidable an armament. His first action was fought on the banks of a river about twelve miles from the sea-coast:[9] thence he pushed on into the interior of the island as far as the more important river Tamesis (Thames), which bounded the territory of Cassivellaunus, king or chief of the Trinobantes. This chieftain had been appointed to the supreme command of the British forces, but appears to have abandoned the defence of the maritime districts as hopeless, and withdrew at once across the Thames, the line of which he hoped to defend against the invader. Cæsar reached that river at a distance of about 80 miles from the sea, at a spot which, according to the information which he had received, was the only one where the stream was fordable:[1] he here succeeded in forcing his passage and capturing a "town" or stronghold of Cassivellaunus not far distant.[2] This was the farthest point to which he penetrated. Several of the neighbouring tribes hastened to send deputies and make overtures of submission,[3] and their example, after a short time, was followed by Cassivellaunus himself. Cæsar, apprehensive lest the war should be protracted until the close of the summer, and desirous of returning to Gaul, admitted them to favourable terms, and contented himself with demanding hostages and the imposition of a nominal tribute.[4]

The military operations in Gaul during the remainder of the season had no especial interest in a geographical point of view.

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[7] Cæs. *B. G.* v. 2.
[8] Ib. 8.
[9] Probably the Stour, which flows by Canterbury and Richborough.

[1] See Note D, p. 138.
[2] See Note E, p. 139.
[3] See Note F, p. 139
[4] Ibid. v. 22.

The revolt of the German, or semi-German, tribes of the Eburones and Treveri, though they succeeded in cutting off one division of his army under Titurius Sabinus and Aurunculeius Cotta, and gravely endangering two others, was unsuccessful, and failed in producing any permanent result. Cæsar had judiciously posted all his legions, with a single exception, in the territory of the Belgians (in the wider sense of the word): this being apparently the only part of Gaul where he expected any outbreak. He himself took up his winter quarters at Samarobriva (Amiens), which appears to have been one of the most considerable towns in those regions.

§ 9. The conquest of Gaul was however still far from being complete, and the three following campaigns (B.C. 53, 52, and 51), were all employed in putting down insurrections of the native tribes that combined in defence of their liberties before they were finally compelled to acquiesce in their subjection to the Roman yoke. The first of these was principally confined to the Belgian, or rather German, tribes of the Treveri and Eburones, and the assistance sent them from beyond the Rhine, from the powerful nation of the Suevi, led Cæsar to cross that river for the second time. His passage was effected on this occasion a little higher up than before, but in the same part of its course. He did not penetrate any farther into the interior than on the previous occasion. He was received in a friendly manner by the Ubii, whose territory immediately adjoined the Rhine; but found that the Suevi had retired on his approach to the farthest limits of their territory, where a vast forest, called by Cæsar the Silva Bacenis, separated them from the Cherusci[5] on the east; and hither he judged it im-

[5] *B. G.* vi. 10. This is the first mention of the name of the Cherusci, afterwards so familiar to the Romans during their long wars in Germany. They appear to have dwelt at this time between the Weser and the Elbe. The forest called by Cæsar Bacenis (a name not found in later writers), which he describes as "silva infinita magnitudine" would therefore correspond to the Harz and the range of the Teutoburger Wald, on the borders of Westphalia.

prudent to follow them. He therefore withdrew a second time across the Rhine, after a brief stay on the German side of the river.[6] Nevertheless, he availed himself of the opportunity to collect many interesting particulars concerning the nations, inhabitants, and natural productions of Germany, with which the Romans now for the first time became acquainted.[7]

§ 10. The following campaign (B.C. 52), in which the standard of revolt was raised by Vercingetorix, at the head of the Arverni, and was followed by a general defection of almost all the Gaulish tribes—even the faithful Ædui being carried away by the contagion of example to join in the movement—was in a political sense one of the most important of all, and never did the military genius of Cæsar show itself more conspicuously: but his movements were confined within the limits of Gaul itself, and he had no occasion to carry his arms beyond the districts with which he was already acquainted. Hence the operations of this year, interesting as they are in a military and topographical point of view, cannot be considered as having contributed materially to the extension of geographical knowledge.

The same remark applies to the desultory hostilities of the following year (B.C. 51), which were confined to successive partial revolts in different parts of Gaul—among the Bellovaci and Treveri in Belgium, and among the Pictones and adjacent tribes in the west. The last blow was given to this final movement by the reduction of Uxellodunum, a fortress of great natural strength,[8] in which the last of the rebel leaders had taken refuge. The capture of this stronghold may be said to have completed the conquest of Gaul. From this time the whole country from the Rhone and the Rhine to the Western

[6] Cæs. *B. G.* vi. 9, 10, 29.

[7] Ibid. 21–28.

[8] The position of Uxellodunum may be now considered as established beyond a doubt. It occupied a hill, now uninhabited, called the Puy d'Issolu, near the north bank of the Dordogne, within the limits of the district still called Quercy, a name derived from that of the Cadurci, its ancient inhabitants—but near the frontiers of the Limousin. This site, which was first suggested by D'Anville (*Notice de la Gaule*, p. 729), and adopted by Thierry (*Hist. des Gaulois*, vol. iii. p. 220), has been fully confirmed by researches made on the spot by order of the Emperor Napoleon III. (See his *Vie de César*, vol. ii. p. 343.)

Ocean, passed, without any further attempt at resistance, under the ordinary administration of a Roman province, and rapidly acquired, in all but the remotest districts, a strong tincture of Roman civilization.

§ 11. With regard to Gaul itself the effect of these successive campaigns of Julius Cæsar was to bring the whole of that great country within the domain of definite geographical knowledge. For the vague ideas and arbitrary assumptions of previous authors were substituted the distinct and clear statements of an able observer and remarkably lucid writer. Our good fortune in possessing the original work in its integrity renders this contrast still more striking to us, and in estimating the results thus obtained we must bear in mind that had we possessed in like manner the complete works of some of the Greek writers, especially Polybius and Posidonius, we should probably have found that they possessed, though in a somewhat vague and imperfect form, a knowledge of many nations, as well as physical features of the country, that are now for the first time found mentioned in the pages of Cæsar.

But whatever allowance may require to be made on this account, it is certain that Cæsar's own record of his observations and operations in Gaul must have formed for the Romans, as well as for ourselves, the first foundation of all accurate knowledge of that country. The brief geographical summary with which he opens his work states clearly the ethnological division of the country into three portions, the inhabitants of which, as he distinctly tells us, differed from one another in language, institutions, and laws. These were the Aquitani in the south, the Belgæ in the north, and the Celts or Gauls proper in the intermediate portion. Their boundaries also are clearly marked, the Gauls being separated from the Aquitani by the river Garumna or Garonne, and from the Belgæ by the Seine and Marne, and here, as well as in other passages, we find him well acquainted with all the principal rivers which, in the case of Gaul especially, form the leading features in the physical geography of the country. Not only

are the Seine, Loire, and Garonne repeatedly mentioned in his Commentaries, but their tributaries, the Marne (Matrona), the Aisne (Axona), and the Allier (the Elaver), were equally well known to him. He describes also clearly the course of the mountain ranges of the Cevennes (Mons Cebenna), the Jura, and the Vosges (Vosegus), as well as the great forest tract of the Ardennes (Silva Arduena), which at that period constituted so important a natural feature in the north of Gaul.[9] His repeated campaigns in Belgium rendered him familiar not only with the course of the Rhine and the Meuse (Mosa),[1] but with those of the Sambre (Sabis), the Scheldt (Scaldis), and even the Waal (Vacalus), which he correctly describes as a branch of the Rhine, flowing into the Meuse.[2] But his knowledge of the island of the Batavi, which he conceived to be intercepted between the two rivers, was derived only from hearsay, and was necessarily imperfect.

§ 12. Still more complete and accurate was his knowledge of the different nations and tribes that inhabited the country at the time of its conquest. Here his position gave him advantages which no ordinary geographer would have possessed: and where he enumerates the nations that on different occasions combined in arms against him, with the force of their several contingents, or that successively submitted to his yoke, we may feel confident that his lists are based on authentic materials. Such lists are found, of the Helvetians and their allies in the first book, of the Belgic tribes in the second, of the Armorican nations and the Aquitanian tribes in the third, and a more general enumeration, comprising all the principal populations of Gaul in the seventh book, when they formed a general league under Vercingetorix. An examination of these lists is one of the most satisfactory things in ancient geo-

[9] His statement of its extent—that it covered a space of more than 500 miles in length, from the Rhine and the borders of the Treveri, to the confines of the Nervii and the Remi—is indeed in any case a great exaggeration; but he here doubtless followed some vague popular estimate. *B. G.* v. 3, vi. 29.

[1] It must be mere chance that the name of the Moselle does not occur in the Commentaries.

[2] *B. G.* iv. 10.

graphy: the greater part of the names are recognized at once from their having continued down to a recent period to give name to the provinces or districts where they dwelt, or being still retained in those of their chief towns. A comparatively small number only have disappeared, and these for the most part were either obscure or insignificant tribes, or, as in the case of the German races in Belgium, have been effaced by the continual waves of invasion that have swept over that part of Gaul.

In many cases also the towns may readily be identified from their preserving the names of the tribes to which they belonged, while in others they retained the same names under the Roman Empire, and are therefore well known. Such was the case (among others) with Avaricum (Bourges), Agedincum (Sens), Genabum (Orleans), and Lutetia (Paris), the position of which upon an island in the Seine is distinctly noticed.[3]

It is a fact peculiar to the geography of Gaul that in the great majority of cases the chief towns of the several tribes gradually lost their own separate appellations, and were known only by those of the tribes to which they belonged. Thus Samarobriva, the capital of the Ambiani, became Ambiani, whence its modern name of Amiens; Avaricum of the Bituriges in like manner passed into Bourges; Noviodunum of the Suessiones into Soissons, and so in numerous other instances. In all these cases, however, the change can be readily followed: and no doubt can exist as to the identification of the cities, which have continued to occupy the sites of the original capitals.

The case is otherwise with the great strongholds of the Gauls at Gergovia and Alesia, both of which sites were subsequently abandoned, when their strength as fortresses had ceased to be of value. Both of them, however, can fortunately be identified beyond a doubt: the hill of Gergovia having always retained its original name, though uninhabited;

[3] *B. G.* vii. 57.

while that of Alesia is still marked by the village of Alise Ste. Reine, in a commanding position on Mont Auxois, about 12 miles from Montbard. It is probable also that Bibracte, repeatedly mentioned by Cæsar as the capital of the Ædui, and commonly identified with the Roman city of Augustodunum (Autun), really occupied a much stronger and more elevated position on the hill called Mont Beuvray, some distance further west.[4] Uxellodunum, though a site of great natural strength, does not appear to have ever been a town of much importance.

§ 13. But if we are struck with the accuracy, as well as the extent, of Cæsar's information concerning Gaul—a country which he had traversed in all directions during a space of ten years—the case is very different with regard both to Britain and Germany. In some respects indeed the information obtained by Cæsar with respect to these two countries was even a more valuable addition to the stock of geographical knowledge previously existing than his contributions to that of Gaul. For the notions concerning them to be derived from any earlier sources were so utterly vague and unsatisfactory, that the amount of knowledge he was able to collect upon the subject—imperfect as it was—was of the highest value, as supplying at least a certain portion of definite and trustworthy fact. He himself tells us that when he attempted to gather information concerning Britain from the Gaulish traders who were in the habit of visiting the island, he was unable to learn what were its magnitude and dimensions, by what nations it was inhabited, or even what were the largest and most commodious ports.[5] Considering that an extensive trade was undoubtedly carried on between the two countries, and

[4] See D'Anville, *Notice de la Gaule*, p. 156; and a note to Napoléon's *Vie de César*, vol. ii. p. 67.

[5] *B. G.* iv. 20. "Itaque vocatis ad se undique mercatoribus, neque quanta esset insulæ magnitudo, neque quæ aut quantæ nationes incolerent, neque quem usum belli haberent aut quibus institutis uterentur, neque qui essent ad majorum navium multitudinem idonei portus, reperire poterat."

A passage that is instructive as showing the difficulty of procuring information from such sources, and the consequent uncertainty of all statements derived from them.

that the southern or maritime districts of the island were inhabited by tribes of Belgian origin, who retained the names of the parent races from which they had sprung,[6] and preserved at least some degree of political connection with them, it is impossible to doubt that this ignorance was in part assumed; but it serves clearly to prove the difficulty of obtaining such information, and fully accounts for the vague character of the reports circulated by previous writers.

§ 14. Cæsar himself did not, as we have seen, advance far beyond the Thames: he landed on both occasions at the same point, and returned to it again to re-embark for Gaul. His opportunities of personal observation were therefore very limited, and he does not appear to have held personal intercourse with any of the more important nations of the island, except the people of Cantium or Kent—who were, as he remarks, by far the most civilized people in the country, and differed but little from their neighbours in Gaul—and the Trinobantes, who occupied a tract north of the Thames, probably comprising the modern counties of Essex and Hertfordshire. His information concerning the tribes of the interior was therefore derived chiefly from hearsay; as was necessarily the case with his general geographical notices. He describes the island[7] as of triangular form, one of the angles being formed by the projecting point of Kent (Cantium), another by a promontory extending towards the south, in the direction of Spain. The coast between these two, which faced that of Gaul, was about 500 miles in length. The west coast, opposite to which lay Hibernia, was said to be about 700 miles in extent; while the third, which faced the north (north-east) was not less than 800 miles. Hibernia[8] was estimated at about

[6] *B. G.* v. 12.

[7] Ibid. v. 13.

[8] "Alterum vergit ad Hispaniam atque occidentem solem; qua ex parte est Hibernia, dimidio minor, ut æstimatur, quam Britannia." *Ibid.* This is the first mention in any extant author of the name of Hibernia, though there can be no doubt that the name at least was known to the Romans long before, as was that of Ierne to the Greeks.

The expression of "vergit ad Hispaniam" is very singular; but would seem to imply that he conceived the position of Britain somewhat in the same manner that Strabo did; though he distinctly placed Ireland to the *west* of it, and not to the north.

two-thirds of the size of Britain, from which it was separated by a strait of about the same width as that from Britain to Gaul. Midway between the two was an island called Mona: besides which numerous other islands were scattered around the principal one, in some of which it was asserted that at the winter solstice there was continuous night for thirty days.[9] Of this Cæsar could get no definite account, but he ascertained by observations instituted on purpose with water-clocks that even in the parts of Britain visited by himself, the nights at that season (the late summer) were shorter than in Gaul.[1] The climate was also more temperate, and the cold in winter less severe.

It is remarkable that no allusion is found in the Commentaries, either in this passage or elsewhere, to the celebrated Cassiterides or Tin Islands, in connection with Britain, though it cannot be doubted that it was the richness of Cornwall in this respect that led to the extensive trade with Britain carried on by the Veneti from Bretagne; who probably transported the ore from thence to the mouth of the Loire.[2] Cæsar was erroneously informed that tin (plumbum album) was found in the *interior* of Britain[3]—a statement which, if it were not intended to mislead, can only be ascribed to the ignorance of the Belgian tribes in the south-east of the island concerning the remote corner in the south-west. Pearls, which had been supposed to be produced in Britain in large quantities, were found to be in fact neither large nor of fine quality.[4]

§ 15. Still more imperfect was the acquaintance possessed

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[9] *Ibid.* It is evident that this is only a reappearance of the confused traditions about Thule; but from the expression of Cæar (de quibus insulis *nonnulli scripserunt*) it seems that he is here referring to the statements of earlier authors (Greek or Latin) rather than to anything he heard in the country.

[1] "Nos nihil de eo percontationibus reperiebamus, nisi certis ex aqua mensuris breviores esse quam in continenti noctes videbamus." *Ibid.*

[2] The information on this subject collected by P. Crassus has been already referred to (see Note 8, to p. 115).

[3] "Nascitur ibi plumbum album in mediterraneis regionibus," v. 12.

[4] The British pearls are not alluded to by Cæsar, though asserted by some later writers to be one of the temptations that induced him to attempt the conquest of the island. (Suet. Cæs. 47. See Chapter XXIII. Note A.)

by Cæsar with Germany, so far as it rested on personal observation. Though he twice crossed the Rhine with an army, and might undoubtedly boast of being the first Roman general who ever set foot on German soil, he penetrated on each occasion but a very small distance into the interior, and has furnished us with no details of his operations. But from his alliance with the Ubians, who at this period occupied the right bank of the Rhine, as well as from the numerous German prisoners taken from Ariovistus, he appears to have had the means of obtaining information concerning the neighbouring tribes and nations, as well as the character of the country in general, of a more trustworthy character than would have been within the reach of any ordinary geographer. Thus we find all the principal tribes that he mentions—the Suevi, the Sugambri or Sicambri, the Usipetes and Tencteri, as well as the Ubii themselves, and the more distant Cherusci, all noticed under the same names by which they shortly afterwards reappear in history[5]: and though their limits and places of abode cannot be said to be distinctly indicated, this was inevitable, at a time when the leading geographical features of the country were as yet unknown, and there were no towns or fixed points to determine the locality of each tribe.[6] A very large part of Germany was undoubtedly at this period covered with primeval forests. Of these Cæsar mentions two by name, the great Hercynian Forest, which had already been known by name at least to Eratosthenes and Posidonius, and was reported to extend over a space of nine days' journey in width, and more than sixty days' journey in length: its extension in that direction being unknown. It began on the confines of the Helvetii and

[5] Of the tribes that had furnished their contingents to the army of Ariovistus (*B. G.* i. 51)—the names of which were doubtless learnt from the captives—the Tribocci, Vangiones, and Nemetes, were petty tribes dwelling on the *left* bank of the Rhine: the Suevi and Marcomanni are well-known German nations; while the Harudes and Sedusii are supposed to have come from more distant regions to the north.

[6] Cæsar did not penetrate far enough into the interior to become acquainted with any of the great rivers—the Ems, the Weser, and the Elbe—which naturally figure so prominently in the subsequent wars of the Romans in Germany.

Rauraci (with the modern Black Forest) and thence continued along the northern bank of the Danube, to the confines of the Dacians and Anartians,[7] where it quitted the course of the river and turned to the north, into regions which had never been visited.[8] The other, to which he gives the name of Bacenis Silva, he describes as separating the Suevi from the Cherusci:[9] this evidently corresponds with the forest of the Harz, and that subsequently known as the Teutoburger Wald.

§ 16. Cæsar's account of the manners and habits of the Germans,[1] as distinguished from the Gauls, brief as it is, is clear and characteristic, and agrees well in its general features with that collected at a later period by Tacitus. His notices of the wild animals on the contrary that were found in the vast forests of Germany, were necessarily derived from hearsay, and are not unmixed with the same fables which we find still current in the days of Pliny.

Of his ethnographical observations undoubtedly the most important is that in which he remarks that while the German races in his day were perpetually pressing upon the Gauls and tending to establish themselves across the Rhine, the contrary had previously been the case, and Gaulish tribes had formerly crossed the Rhine and established themselves on German territory. This accords well with the fact that we find at an earlier period races of Gaulish origin, the Boii, Taurisci, and others extending down the valley of the Danube even to the frontiers of Dacia and Illyricum.[2]

§ 17. The Civil Wars of the Romans, that preceded the final establishment of the Empire, from their being confined within the limits of the Roman dominions, were naturally little calculated to promote the extension of geographical knowledge. The only exception was the remarkable march of Cato from Cyrene to Utica, which would possess much

[7] This mention of so obscure a people as the Anartians is very singular. A tribe of that name is found in the list given by Ptolemy (iii. 8, § 5) of the Dacian tribes, but they are not mentioned by any other author.

[8] Cæs. *B. G.* vi. 25.

[9] Ib. vi. 10.

[1] Ib. vi. 21–24.

[2] See Chapter XVIII. p. 90.

MAP TO ILLUSTRATE CÆSAR'S WARS.

BRITANNIA
Iceni
Trinobantes
Belgae
Cantium
Fretum Gallicum
Vectis I.
Menapii
Morini
Nervii
Atrebates
Ambiani
Aduatuci
Caleti
Bellovaci
Veromandui
Velocasses
Lexovii
Essuvii
Aulerci
Eburovices
Parisii
Meldi
Tricasses
Senones
Lingones
Leuci
Treveri
Mediomatrici
Sequani
Helvetii
Marcomanni
Hercynia Silva
Germania
Vangiones
Nemetes
Triboci
Rauraci
Tulingi
Helvetii
Pagus Tigurinus
Pagus Verbigenus
Pagus Helvetiorum
Pagus Rauracorum
Pagus Suevorum
Pagus Ambronum
Pagus Tugenorum
Pagus Latobricorum

interest for the geographer, had its details been preserved to us. But unfortunately these are wholly wanting. We learn only from Strabo that he marched *round the Great Syrtis* in thirty days from Berenice;[3] and if any reliance can be placed upon the poetical statement of Lucan, that he completed the whole march to the fertile districts of the Carthaginian territory within two months:[4] a marvellous proof of the endurance and hardiness of the Roman soldiers. He was at the head of an army of more than 10,000 men, but we are not told what proportion of these he led in safety to join the army of Scipio in Africa. The exploit is certainly one of the most remarkable of its kind on record, and may well be compared with the march of Alexander through the deserts of Gedrosia.[5]

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[3] Ἐκ ταύτης τῆς πόλεως (Βερενίκης sc.) τριακοσταῖος πεζῇ περιώδευσε τὴν Σύρτιν Μάρκος Κάτων, κατάγων στρατιὰν πλειόνων ἢ μυρίων ἀνδρῶν, εἰς μέρη διελὼν τῶν ὑδρείων χάριν· ὥδευσε δὲ πεζὸς ἐν ἄμμῳ βαθείᾳ καὶ καύμασι. Strabo, xvii. 3, p. 836. This is the only definite and trustworthy information that we possess concerning this remarkable march. Plutarch furnishes scarcely any particulars, while the bombastic description of it in Lucan, to which it chiefly owes its celebrity, is as vague as it is inflated. The real distance from Berenice (Benghazi) to Cape Mesurata, which forms the western boundary of the Syrtis, is, according to Dr. Barth, who himself performed the journey, more than 105 German or 420 geographical miles. Captain Beechey estimates it at 426 G. miles. Strabo himself in another passage states the circumference of the Great Syrtis at 3930 stadia (Barth, *Wanderungen*, p. 358; Beechey's *Tripoli*, p. 256). It is most probable that Strabo would reckon his march from one *city* to another, or from Berenice to Leptis Magna, which is about 50 miles farther westward. The march from thence to the Carthaginian territory would offer comparatively little difficulty.

Mr. Merivale has been misled by the confused narrative of Lucan into supposing that it was the Lesser Syrtis which alone was the scene of this perilous march, but the testimony of Strabo is clear and explicit, and perfectly consistent with the natural features of the country. This has unaccountably been overlooked by Mr. Long.

[4] Lucan, ix. 940. When Plutarch speaks of his traversing the sandy desert for *seven* days continuously (*Cato*, 56) he must clearly refer to some special portion of the march.

[5] The same enterprise had indeed been successfully accomplished at a much earlier period by Ophellas, ruler of Cyrene, who in B.C. 308 conducted an army of Greek mercenaries from that city to the support of Agathocles in his war against Carthage. He also took two months on the march (Diodor. xx. 41, 42). His army was reported, as well as that of Cato, to have suffered severely from venomous serpents. Absurdly exaggerated as are the tales concerning these found in the Greek and Roman writers, they are not altogether without foundation. Several species of snakes whose bite is of a most deadly description are found in the sands of Northern Africa, especially the African Cobra and the Cerastes or Horned Viper. Others attain to a large size. Dr. Barth in

§ 18. Hostilities were also carried on upon the eastern frontier of the Roman Empire during the interval of repose that preceded the final contest between Antony and Octavian, and the operations of the former against the Parthians were attended with some successes and deserve a passing notice. The history of this war was written by his friend and companion Dellius,[6] whose work was used by Strabo, and appears to have thrown some additional light on the countries bordering on Armenia and Mesopotamia. But our knowledge of these campaigns is too imperfect to estimate their value in this respect. We learn however that, after the way had been cleared for him by the successes of his lieutenants, Ventidius and Canidius—the first of whom defeated the Parthians and drove them back across the Euphrates, while the second reduced the Armenian king, Artavasdes, to submission, and even carried the Roman arms for the second time against the Iberians and Albanians[7]—he himself advanced at the head of a great army through Armenia, into Atropatene, a province hitherto unknown to the Roman arms, and which constituted a subordinate kingdom dependent upon the Parthian monarchy. Here he laid siege to a city called by Plutarch Phraata, and by Dion Cassius Praaspa, which is described as a great city, in which the king of Media (Atropatene) had deposited his wives and children for security.[8] It was a fortress of great strength, and the efforts of Antony to reduce it proved ineffectual. Unfortunately its site is very imperfectly indicated. But it appears to be certainly the same place which is called by Strabo Vera,[9] and if this be the case it may probably be identified with the remarkable mountain fortress now known as

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one instance killed a snake between 8 and 9 feet in length (p. 268); but no such gigantic monsters as the Pythons and Boas of India are known in Africa at the present day.

[6] Strabo, xi. p. 523; Plut. *Anton.* c. 25, 59. This is the same Dellius to whom Horace has addressed the well-known ode (Carm. ii. 3).

[7] Plut. *Anton.* 34; Dion Cass. xlix. 24. Plutarch even asserts that Canidius on this occasion advanced as far as the Caucasus (ἄχρι τοῦ Καυκάσου προῆλθεν), a statement that must doubtless be received with some allowance.

[8] Plut. *Anton.* 38.

[9] Οὔερα. Strabo, xi. 13, p. 523. Unfortunately the text of Strabo in this

Takht-i-Suleiman, for which Sir H. Rawlinson has claimed the name of the Atropatenian Ecbatana.[1] Be this as it may, it is certain that Antony on this occasion carried the Roman arms in this direction farther than any preceding, or indeed than any subsequent, general.

Having been compelled to abandon the siege, he commenced his retreat towards Armenia, but suffered severely from drought and thirst in traversing the arid plains of Atropatene (the modern Azerbijan), as well as from the continual harassing attacks of the Parthians. It was not till after twenty-seven days' march, during which they were engaged in almost perpetual hostilities, and are said to have lost not less than 24,000 men, that the Roman army reached the river Araxes, after crossing which they found themselves in safety, within the limits of a friendly country.[2] The distance from Phraata or Vera to the Araxes is given by Strabo, on the authority of Dellius, at 2400 stadia, or 240 G. miles. Sir H. Rawlinson, who was himself well acquainted with the country, points out the accuracy with which the details of this march are given by Plutarch, evidently following the authority of Dellius: among other incidents the sufferings of the Roman soldiers were on one occasion greatly augmented by their coming to a stream of *salt* water which is undoubtedly the Aji, a river flowing a few miles to the north of Tabriz, the only one of this nature in all Azerbijan.[3]

On the other hand the route by which Antony had advanced into Atropatene is very obscurely indicated. Strabo indeed represents him as being purposely misled by the king of

passage is corrupt, and it is impossible to determine the connexion of this name with the preceding clause of the sentence in which is found that of Gazaca, a well-known name, corresponding to the Armenian Gandsak, a treasury. Groskurd, Kramer and C. Müller consider the two names as referring to two distinct places—the one being the winter, the other the summer residence of the kings of Atropatene—and it is difficult to resist this conclusion. Sir H. Rawlinson, on the contrary, identifies the two, as merely different appellations of the same place (*Geogr. Journ. l. c.*). The name of Gazaca occurs in Ptolemy and Ammianus Marcellinus, as well as in Stephanus of Byzantium: that of Vera, I believe, is not found in any other writer.

[1] Rawlinson in *Geogr. Journal*, vol. x. p. 65, &c.

[2] Plut. *Anton.* 41-49; Dion Cass. xlix. 28-31.

[3] Id. ibid. pp. 113-117.

Armenia, who caused him to take a circuitous and laborious route from the Euphrates instead of the more direct and easy one.[4] But this may well be doubted. The direct route from the Zeugma (at Bir) would have led him through the same country as had been traversed by Crassus, and exposed him to a repetition of the same disasters. By keeping to the mountains through Commagene, Sophene, and the southern provinces of Armenia, he avoided exposing himself to the attacks of the Parthian cavalry, while the alliance of the Armenian king secured his northern flank. Artavasdes however, though at first acting as the ally of Antony, abandoned him in the time of his need—a defection for which the Roman triumvir at a later period punished him by invading his kingdom and depriving him of the sovereignty.[5]

It is during this period that we find the first notice of the city of Palmyra, against which Antony detached a predatory expedition, on account of the wealth which the inhabitants were reported to have accumulated by their extensive commercial relations, with the Syrians on the one side, and the Parthian provinces on the other.[6]

[4] Strabo, xi. 13, p. 524.

[5] Plutarch, *Ant.* 50; Dion Cass. xlix. 39, 40. On this occasion Antony advanced from Nicopolis in Lesser Armenia, and pushed on direct upon Artaxata, the Armenian capital, of which he made himself master.

[6] Appian, *B. C.* v. 9. This expedition appears to have taken place in B.C. 41.

NOTE A, p. 114.

BELGIAN TRIBES.

THE enumeration on this occasion of the various Belgian tribes, and the forces they were able to muster, is a document of the highest interest, and furnishes the foundation for all inquiries into the geography of this part of Gaul.

The nations mentioned by Cæsar, most of whom can be determined, and their site fixed with the greatest clearness, are as follows:

The Bellovaci, whose capital city still retains the name of Beauvais.

The Ambiani, whose name is still found in that of Amiens.

The Atrebates who gave name to Artois and its capital of Arras.

The Caletes whose name is still found in that of the Pays de Caux, the part of Normandy adjoining the sea, from the mouth of the Seine to that of the Bresle.

The Veliocasses in the Vexin, the district between the Beauvaisis and the Seine.

The Veromandui in the Vermandois, a portion of Picardie around St. Quentin.

The Suessiones in the diocese of Soissons.

The Remi, who were in alliance with Cæsar, in that of Reims.

In all these cases the names alone suffice to fix the locality beyond dispute. In the case of the Nervii, the most powerful and warlike of all the Belgic tribes, the name has disappeared, though still mentioned by Tacitus and Ptolemy: but their position is certain: they occupied the region of Hainault and the diocese of Cambrai, extending eastward to the Sambre. In like manner the Morini held the sea-coast adjoining the Straits of Calais from the mouth of the Somme to the Scheldt, and the Menapii the still more northerly district about the mouths of the Scheldt and the Meuse.

The Aduatuci were situated to the north of the Nervii, about the confluence of the Sambre and Meuse: their chief city is supposed, though on doubtful evidence, to have occupied the site of Namur.

The Eburones must be placed to the north of these last, apparently in the district subsequently occupied by the Tungri (Tongres);

while the three nations associated with them by Cæsar as distinctly German tribes (qui uno nomine Germani appellantur), the Condrusi, Cærasi, and Pæmani, are otherwise wholly unknown.

The powerful nation of the Treveri (certainly a German tribe) did not take part with the Belgians on this occasion, but is repeatedly mentioned elsewhere in the Commentaries: they held apparently the whole of the subsequent diocese of Treves, on each side of the Moselle, and extending to the left bank of the Rhine. The same was the case with the Mediomatrici, (Cæs. *B. G.* iv. 10, vii. 75) whose name survives in the much abbreviated form of Metz, the ancient diocese of which probably coincided with the limits of their territory. The Ubii at this time dwelt on the right bank of the Rhine, opposite to the Treveri.

NOTE B, p. 119.

CÆSAR'S PASSAGE FROM GAUL TO BRITAIN.

Both the point of departure, from which Cæsar sailed on his expedition to Britain, and that where he landed in the island, have been of late years made the subject of much controversy. Mr. Long, who is the most recent writer that has examined the question, arrives at the conclusion "that it will never be settled whether Cæsar sailed from Wissant or from Boulogne." (*Decline of the Roman Republic*, vol. iv. p. 433.) Without presuming to "settle" the question, I may briefly state the reasons which in my opinion are decisive in favour of Wissant; the conclusion adopted by D'Anville, Gossellin, Walckenaer, as well as more recently by M. de Saulcy. Cæsar tells us that he selected the Portus Itius, as his point of departure, because it was the most convenient passage to Britain, about thirty miles from the continent (quo ex portu commodissimum in Britanniam trajectum esse cognoverat, circiter milium passuum xxx a continenti. *B. G.* v. 2). Now Wissant is the *nearest* port to Britain, and was on that account much used in the middle ages. This was a point that could be readily ascertained by a mere inspection of the coast. It is true that the distance is less than the 30 (Roman) miles stated by Cæsar; but we have repeatedly had occasion to observe that the ancients had absolutely no means of determining distances at sea with any approach to

accuracy. The difference is inconsiderable: Wissant being about 22 English or 23½ Roman miles from Dover: while Gessoriacum or Boulogne is nearly (if not quite) 30 *English* miles from Folkestone, the nearest point of the British coast. It is certain that after the Romans had permanently established themselves in Gaul, and came to have frequent intercourse with Britain, Gessoriacum came to be the customary port of communication between the two: but if we suppose this to be the Portus Itius of Cæsar we have to account for the change of name, of which we have no similar instance in regard to any other name mentioned in the Commentaries.

I entirely concur with Mr. Long in believing the Icium or Itium Promontorium of Ptolemy (ii. 9, § 2) to be Cape Grisnez, the only headland of importance along this whole line of coast, and which must in all ages have attracted attention; though the geographer has in this case much misplaced its position. But if Cape Grisnez be the promontory of Itium, the Portus Itius would be naturally looked for in its immediate neighbourhood: and the name would suit much better with Wissant, which is barely 3 miles from Cape Grisnez, than with Boulogne which is nearly ten.

For a fuller discussion of this subject I must refer my readers to Mr. Long's article Itius Portus in Dr. Smith's *Dictionary of Ancient Geography*, and to his Appendix to his *History*, vol. iv. already cited, as well as to the work of M. F. de Saulcy (*Les Campagnes de Jules César dans les Gaules*, Paris, 1862, pp. 125–224). The arguments on the other side are ably brought forward by Mr. Lewin (*Invasion of Britain by Julius Cæsar*, 8vo., London, 1859).

NOTE C, p. 119.

LANDING OF CÆSAR IN BRITAIN.

This point, like that discussed in the preceding note, after having been regarded as a settled question by most English historians and topographers from Camden down to our own day, has of late been much disputed. It would far exceed the limits of a note to enter into the details of the controversy, for which I must again refer my readers to Mr. Long's valuable *History of the Decline of the Roman Republic*, vol. iv. Appendix I., who has, in my opinion,

successfully refuted the arguments of those who contend that Cæsar must have landed to the *westward* of Dover, in the neighbourhood of Hythe or Lympne. The contrary seems certainly implied in the expression of Cæsar that, on his second voyage, when his ships had drifted with the tide, *he found at dawn of day that he had left Britain behind him on his left* ("longius delatus æstu orta luce sub sinistra Britanniam relictam conspexit," v. 8). This passage is in my opinion decisive of the whole question. It is not only clearly intelligible, but appropriate and graphic (as Cæsar's language generally is) on the supposition that the fleet was carried through the Straits of Dover *beyond* the South Foreland, where the coast trends away to the north. The advocates of the opposite theory fail to give any intelligible explanation of it in accordance with their views.* I will only add that the distance of 12 miles from the place of his landing to the river where the enemy first disputed his advance would just about bring him to the banks of the Stour. This question has also been fully investigated by M. F. de Saulcy, in the work cited in the previous note, who arrives at the conclusion that Cæsar sailed from Wissant and landed at Deal.

NOTE D, p. 120.

PASSAGE OF THE THAMES.

The precise spot at which Cæsar crossed the Thames has been a subject of much controversy, and cannot yet be said to be determined with certainty. But it may be placed with reasonable assurance within narrow limits. It could not have been lower down than Kingston, because the tide comes up as far as Teddington, just below that town: and there is no reason to place it higher up than Chertsey. At the present day the river is fordable at many points between these towns, the most practicable of such fords being at Sunbury. But the name of Coway Stakes, still given to a spot on the north bank of the river, near the mouth of the Wey, and the tradition preserved by Bede, that the stakes still visible in his day in the river-bed were those which had been driven in to prevent the passage of Cæsar, certainly give a strong probability to the supposition, adopted by Camden and others, that this was the very spot where he crossed the river. Its distance from the sea

would also accord sufficiently well with the statement of Cæsar that the Tamesis was about 80 Roman miles from the sea (*B. G.* v. 11). This estimate could obviously have reference only to his own march from the neighbourhood of Deal. The *direct* distance from the Thames to the nearest part of the coast of Sussex he had no means of knowing. (Cæsar, *B. G.* v. 18; Orosius, vi. 9; Bede, *Hist. Eccles.* i. 2; Camden's *Britannia*, vol. ii. p. 168. See also the *Archæologia*, vol. ii. pp. 141–158, and a note to the Emperor Napoleon's *Hist. de César*, vol. ii. p. 191.)

NOTE E, p. 120.

THE CAPITAL OF CASSIVELLAUNUS.

Mr. Merivale supposes this "oppidum" of Cassivellaunus to have been on the site of Verulamium, but there seems to me no foundation for this. It is precisely in reference to this "oppidum" of Cassivellaunus that Cæsar explains what was meant by the term among the Britons—a mere stockade or enclosed space in the midst of a forest where they took refuge with their flocks and herds in case of an invasion. "Ab his cognoscit non longe ex eo loco oppidum Cassivellauni abesse silvis paludibusque munitum, quo satis magnus hominum pecorisque numerus convenerit. Oppidum autem Britanni vocant, cum silvas impeditas vallo atque fossa munierunt, quo incursionis hostium vitandæ causa convenire consuerunt" (*B. G.* vol. v. 21). There would be little reason why such a temporary stronghold should become converted into a Roman town.

Other writers place it in the neighbourhood of Wendover, a divergence which sufficiently shows the utter absence of any real clue to its position.

NOTE F, p. 120.

BRITISH TRIBES.

The names of these tribes as given by Cæsar (*B. G.* v. 21) are the Cenimagni, Segontiaci, Ancalites, Bibroci, and Cassii: none of which are mentioned by any later writer or are found in Britain under the Roman dominion. Hence they cannot be placed with

any certainty, though there are some reasons for supposing the Segontiaci to have occupied a part of Berkshire, of which Silchester was the capital. (Beale Poste, *Britannic Researches*, p. 155.) It has been proposed by some editors to read "Iceni, Cangi," for the unknown name of the Cenimagni, but there is no authority for so arbitrary a change. It was first proposed by Lipsius in a note on Tacitus (*Annal.* xii. 32), and has been adopted by the recent editors Nipperdey and Oehler: but it is improbable that so powerful a tribe as the Iceni should have submitted so readily. It is much more likely that the names thus enumerated by Cæsar should have been comparatively unimportant tribes on the banks of the Thames (say in Buckinghamshire and Berkshire) which at a later period had been absorbed into the more important tribes, or were too insignificant to attract notice.

The Cassii are assumed by Dr. Latham (*Dict. of Anc. Geogr. s. v.*) to be the people of whom Cassivellaunus was king, but this is not stated by Cæsar, and is certainly at variance with this incidental notice of their submission, while Cassivellaunus still held out. Cæsar does not mention over what people that chieftain *originally* ruled: he had established himself on the throne of the Trinobantes by the murder of the previous king—the father of Mandubracius (*B. G.* v. 20)—but it is not clear whether this was his original kingdom, or an addition made to his previous dominions. The name of Cashiobury (near Watford, about 7 miles S.W. of St. Alban's) may possibly, as suggested by Dr. Latham, retain some trace of that of the Cassii, but the evidence of a single isolated name is very precarious.

CHAPTER XX.

ROMAN EMPIRE UNDER AUGUSTUS.

SECTION 1.—*Roman Empire under Augustus.*

§ 1. THE annexation of Egypt as a Roman province (B.C. 30) completed in great measure the fabric of the Roman Empire, in the form which it retained with comparatively little alteration during a period of three centuries. The whole extent of the Mediterranean Sea, which still continued to be the centre of the ancient world, was now encircled by an uninterrupted chain of provinces, either directly subject to the Roman administration, or held by tributary and dependent kings, who enjoyed their nominal sovereignty only at the pleasure of their all-powerful neighbour. The number of these vassals or protected states still continued to be more considerable in the time of Augustus than at a later period, the greater part of them having afterwards been gradually absorbed into the vast monarchy of Rome. It will assist us in considering the state of geographical science under the Roman Empire, its progress and its limits, if we take a brief preliminary survey of that Empire itself, as it was first constituted under Augustus, as well as of its relations with its immediate neighbours.

Commencing with the West, the whole of Spain had been reduced to a state of subjection, and was divided into three provinces. Some of the northern tribes, indeed, the Cantabri and the Astures, who held the rugged mountain regions adjoining the Bay of Biscay, had still maintained their independence, until after the accession of Augustus, and were not finally subdued until the year 22 B.C.[1]

[1] Dion Cass. liii. 25, liv. 5. Strabo, iii. p. 156. All scholars are familiar with the allusions to these wars in Horace ("Cantaber non ante doma-

The conquest of Gaul had been completed by Julius Cæsar, and the whole country, from the Pyrenees to the Rhine and the Ocean, passed without difficulty under the dominion of Augustus. The foundation of numerous colonies, and the construction of roads in all directions tended rapidly to disseminate Roman civilization through all parts of the country; and while the Roman armies on the Rhine were kept in almost continual hostilities with their neighbours, the Germans, on the other side of that river, Gaul itself appears to have enjoyed almost undisturbed tranquillity.

It was especially to Agrippa that Gaul was indebted for much that contributed to promote its prosperity. It was he that first laid out and constructed four great lines of road, all proceeding from Lugdunum (Lyons) as a centre, of which one traversed the central provinces as far as the Santones on the Western Ocean, another led to the Rhine; a third to the Northern Ocean, adjoining the Bellovaci and Ambiani; and the fourth southwards to the province of Narbo and Massilia.[2] It is from the same period that dates the distribution of Gaul into four provinces; the old Roman province of Gallia Narbonensis in the south, Belgica in the north, and Gallia Lugdunensis, which extended from Lugdunum to the farthest extremity of Armorica, but was bounded by the Loire to the south: the whole territory from that river to the Pyrenees being included under the name of Aquitania, though the people of that name, as described by Cæsar, did not extend north of the Garonne.[3]

§ 2. No attempt was made either by Augustus or his immediate successor to follow up the imperfect designs of Julius Cæsar, by renewing the invasion of Britain. We are told indeed that on two occasions—once before the downfall of Antony, and

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bilis," *Carm.* iv. 14, 41; "Cantabrum indoctum juga ferre nostra," Ibid. ii. 6, 2, etc.). The name of the Astures appears to have excited less attention, and is not found in the Roman poets of this period; though it has survived to our own days in that of the Asturias.

[2] Strabo, iv. p. 208.

[3] This division continued in use till the time of Constantine, and is recognised both by Pliny and Ptolemy.

again at a subsequent period (B.C. 27) —the emperor entertained the project of an expedition to the British Islands;[4] but he contented himself with the more practical and easier task of settling the administration of Gaul, and accepted friendly overtures from the princes and chieftains of the island, without insisting on the payment of a regular tribute.[5]

With Germany, on the other hand, the relations of the Romans were becoming continually more frequent, and though they were generally of a hostile character, they could not but add materially to the knowledge previously possessed of these wild and thinly-peopled regions, hitherto so little known either to Greek or Roman writers. The expeditions of successive Roman generals, who carried their arms as far as the Weser and the Elbe, will deserve to be noticed in their chronological sequence. But no part of Germany beyond the Rhine was permanently added to the Roman dominions under Augustus. It was not till a considerably later period that the Roman frontier was carried to the line stretching across from the Rhine to the Danube, so as to include almost the whole of Suabia.

§ 3. On the southern side of Germany the case was very different. It was here that the Roman Empire received by far its most important accession under Augustus, by the conquest of what may be briefly called the Danubian provinces, including Rhætia, Vindelicia, Noricum, and Pannonia. Strange as it appears to us at the present day, it is an undoubted fact that while Italy was extending its power to the Western Ocean on the one side, and to the Euphrates and Araxes on the other, the wild tribes on its own northern frontier had never been subdued, and the valleys and defiles of the Alps were still held by races of hardy and vigorous mountaineers, who defied the power of Rome and disdained even the semblance of submission. It was not till long after the accession of Augustus to the imperial power that he turned his attention in earnest to the

[4] Dion Cass. xlix. 38, liii. 22, 25.

[5] Strabo, iv. p. 200.

subjugation of these tribes, who had recently provoked his interference by lawless incursions into Cisalpine and Helvetian Gaul, in which they had displayed even more than their accustomed barbarity. They were, however, effectually reduced to subjection (in B.C. 15) by the two step-sons of the Emperor, Drusus and Tiberius, their strongholds in the mountains stormed, and a considerable part of the population compelled to emigrate. The Rhætians, who held the mountains adjoining Tridentum (Trent), and extended from thence through the Tyrol into the Grisons, were the first to succumb; but the Vindelicians, who occupied the northern slopes of the Alps, were subdued within the same summer, and the Roman frontier was carried at once to the Lake of Constance and the Danube.[6] The foundation in the newly acquired territory of the colony of Augusta Vindelicorum (Augsburg) which speedily rose to be one of the most flourishing and important colonies of the empire,[7] tended materially to consolidate the new conquest. Noricum, a district which had previously maintained friendly relations with Rome,[8] shared the same fate, apparently on very slight grounds of provocation.[9]

The Pannonians, on the other hand, did not succumb without a vehement and long-continued struggle with the Roman power. On their south-western frontier they immediately adjoined

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[6] Dion Cass. liv. 22: Strabo, iv. 6, p. 206; Vell. Pat. ii. 96. These were the campaigns which are celebrated by Horace in two of the finest odes of his fourth book, which was published within a few years afterwards (Carm. iv. 4, and 25). The name of the Vindelici appears on this occasion for the first time. That of the Rhæti was known to Polybius (ap. Strab., iv. p. 209); but it is hardly likely that that author had any real acquaintance with the tribes on the other side of the Alps. The two nations appear throughout as intimately connected with one another, and were probably of common origin.

[7] It is termed by Tacitus (*Germania*, c. 41), "splendidissima Rætiæ provinciæ colonia."

[8] A king of Noricum is mentioned by Cæsar (*Bell. Civ.* i. 18) as sending an auxiliary force of 300 cavalry to his support at the outbreak of the Civil War. He must therefore have established friendly relations with him during the time that he held the command in Cisalpine Gaul. But the extensive use among the Romans of Noric iron, which appears to have been the principal source of their supply of that indispensable metal, implies the existence of extensive commercial relations.

[9] Dion Cass. liv. 20. See Note A, p. 144.

that of the Romans, and their native hardihood led them to molest their richer neighbours by continual incursions. An extensive commerce was already carried on from Aquileia, in the land of the Veneti—one of the most flourishing cities of Northern Italy—over the pass of Mount Ocra into the valley of the Save, and thence to the Danube:[1] and this it became an important object with the Roman government to secure. Hence we find Augustus, as early as B.C. 35, conducting an expedition in person into Pannonia, which ended with the capture of their strong city of Siscia on the Save,[2] a blow which was followed for a time by the submission of the whole people. They were however far from being effectually subdued: we find them again in arms in B.C. 15, when they invaded the Roman province of Istria: and it was not till A.D. 8 that they were finally reduced to subjection.[3]

§ 4. But if it is remarkable to find provinces so nearly adjacent to Italy retaining their independence to so late a period, it is still more surprising, according to our modern notions, to learn that this was the case to a great extent even with tribes on the south side of the Alps, and which we are accustomed to consider as altogether included within the limits of Italy. Yet it is certain that many of these mountain tribes were, at the time when Augustus first ascended the throne,

[1] Strabo, vii. p. 314. Strabo correctly points out that this pass was the lowest part of the Alpine chain which, extended from the Rhætian Alps to the country of the Iapodes, where it rose again to a more considerable elevation. The Iapodes occupied a part of the modern Croatia, extending from the Save and the Kulpa, to the Gulf of Quarnero at the head of the Adriatic. They were a wild and warlike race, who were first reduced to subjection by Augustus.

[2] Dion Cass. xlix. 36, 37. According to the boast of Augustus himself, this was the first occasion on which the Pannonians were assailed by the Roman arms (Monum. Ancyr. p. 35). Siscia was situated at the junction of the Kulpa (Colapis) with the Save, a position which gave it an importance analogous to that of Belgrade in modern days. The site is still marked by a village named Siszek.

[3] Dion Cass. lv. 29–34; Vell. Pat. ii. 110–116; Suet. *Tib.* 16; Mon. Ancyr. p. 35. The alarm at Rome on this last occasion was great, principally no doubt on account of the proximity of the enemy, who were actually designing to invade Italy by the pass of Mount Ocra; and could thus have been at the gates of Rome, it was said, within ten days! Hence also Suetonius (*l.c.*), with obvious exaggeration, calls the war "*gravissimum* omnium externorum bellorum post Punica."

either altogether independent of the Roman authority, or, if nominally tributary, yet exempt from all practical control, and ready at any time to break out into hostilities. Such was the position of the Salassi, who occupied the great valley of Aosta, from its entrance at Ivrea to the foot of the mountain passes at its head. They had indeed been attacked and defeated as early as B.C. 143 by the Consul Appius Claudius, and in B.C. 100 the Roman colony of Eporedia (Ivrea) was settled at the mouth of the valley. But they continued to retain their lawless and predatory habits, and committed constant depredations upon the neighbouring colonists, as well as upon all who had occasion to pass through their country. In one instance they plundered the baggage of a part of Cæsar's army; and compelled Decimus Brutus on his retreat from Mutina in B.C. 43 to purchase his passage by the payment of a large sum of money.[4] It was not till after repeated campaigns that they were finally reduced to subjection by Terentius Varro in B.C. 25; a result that was attained only by the almost total extirpation of the tribe.[5] At the same time the foundation of the Roman colony of Augusta Prætoria (Aosta) at the point of junction of the two passes of the Great and Little St. Bernard, served to secure those two important lines of communication.[6]

Very much the same state of things existed also in regard to other Alpine tribes in somewhat similar situations, such as the Camuni—whose name is still retained in that of the Val Camonica—the Lepontii at the head of the Lacus Verbanus or Lago Maggiore;—the Triumpilini, in the Val Trompia, &c.: all of which were seated on the Italian slope of the Alps.

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[4] Strabo, iv. p. 205.

[5] Id. ibid. Dion Cass. liii. 25.

[6] It is certain that from this period onward the only three passes of the Alps from Italy into Gaul that were in habitual use were: 1, that through the Cottian Alps (the Mont Genèvre), which led down the valley of the Durance into that of the Rhone; 2, the Little St. Bernard (per Alpes Graias), which led from Augusta direct to Lugdunum, and was much the shortest route into central Gaul; 3, the Great St. Bernard (per Alpes Penninas), which was the direct road to the Lake Lemannus and the country of the Helvetians.

The Maritime Alps were in like manner held by Ligurian tribes, who retained their independence till the year 14 B.C., when they were for the first time reduced to subjection.[7] Augustus after this carried a high road through their country, and to commemorate the final conquest of the Alpine tribes erected a monument at the highest point of the pass, recording the names of not less than forty-four "Gentes Alpinæ devictæ." The monument is still standing, at a place called Turbia (a corruption of Tropæa Augusta), though in ruins: but the inscription has fortunately been preserved to us by Pliny,[8] and is one of our most important authorities for the topography of the Alpine tribes. Many of them, however, are of course obscure names, otherwise unknown, and which cannot be determined with any certainty.

But even thus the whole of the Alpine regions were not yet incorporated with the Roman Empire. There still remained twelve petty tribes, placed under a native king named Cottius, who having been uniformly friendly to the Romans, had given no pretext for hostilities, and continued to enjoy the nominal sovereignty of a small mountain territory, standing in much the same relation with the Roman Empire that the "protected" native princes hold with the British Empire in India. His capital was Segusio, now Susa, and an inscription still extant records the names of the "civitates" subject to his rule.[9] It was not till the reign of Nero that this petty principality was formally included in the Roman dominions: and the name of the Cottian Alps attached to the portion of the range adjoining the Mont Genèvre, continued to perpetuate until long after the memory of their obscure ruler.

§ 5. On the other side of the Adriatic, Illyricum and Dal-

[7] Dion Cass. liv. 24.

[8] Plin. iii. 20, s. 24, § 136. The inscription bears the titles Imp. xiii. Tr. Pot. xvii., which prove that this monument was not set up till B.C. 7.

[9] It is still visible on a triumphal arch at Susa erected by Cottius himself in honour of Augustus; and is given in Orelli's *Inscriptiones Latinæ Selectæ*, No. 626. Most of these names are otherwise unknown, and were doubtless those of obscure and petty tribes; but among them are those of the Medulli and Caturiges, who occupied the valleys on the Gaulish side of the Mont Genèvre, and we thus learn that the dominions of Cottius extended on both sides of the Alps.

matia were for the first time reduced to permanent subjection as a Roman province under the reign of Augustus. Illyricum had been indeed conquered as early as B.C. 167, when after the defeat of its king Gentius, it was reduced to a condition analogous to that of Macedonia, though it did not then receive the formal organization of a province. But at a later period we find it placed under the government of Julius Cæsar, at the same time with the two Gauls: and at this date it seems to have already passed into the ordinary condition of a Roman province. Nor do we hear of its causing him any trouble; except a plundering incursion of a people called the Pirustæ on its south-eastern frontier.[1] But the Dalmatians, a race of hardy and stubborn mountaineers in the northern part of the province, were certainly still unsubdued at this time: and when, in B.C. 34, Augustus (then only triumvir) undertook their reduction in person, he encountered an obstinate resistance, and his efforts were attended with but partial success.[2] The Dalmatians, as well as their neighbours the Pannonians, appear in arms again and again: it was not till A.D. 10 that they were finally reduced to subjection by Tiberius, who received the honour of a triumph over them, at the same time as for his more celebrated victories over the Germans.[3] From this time the Roman province of Illyricum extended from the frontier of Epirus to the Save: it was often called, at least in official language, Dalmatia, from the prominent part assumed by the people of that name: but the general designation of Illyricum was commonly retained by geographers and historians.[4]

[1] Cæsar, *B. G.* v. 1.

[2] Dion Cass. xlix. 38. This outbreak on the part of the Dalmatians seems to have originated during the Civil War, when the generals of Pompey and Cæsar were striving with one another for the possession of Illyricum. On this occasion Gabinius, the lieutenant of Cæsar, was defeated by "the barbarians" with a loss of more than 2000 men, and compelled to fall back upon Salona (Hirt. *B. Alex.* c. 43). The towns of the sea-coast, Salona and Iadera especially, were at this time flourishing and civilized places (Ib. c. 42, 43), and faithful subjects of Rome, though the barbarians of the interior were still unsubdued.

[3] Dion Cass. lv. 34; Vell. Pat. ii. 116; Suet. *Tib.* 16.

[4] Thus Suetonius, in the passage just referred to, says: "Toto Illyrico, quod inter Italiam, regnumque Noricum, et Thraciam, et Macedoniam, interque Danubium flumen et sinum maris Adriatici patet, perdomito et in ditionem redacto." See also Tacitus (*Annal.* ii. 44; *Hist.* i. 9, 76).

§ 6. Immediately adjoining Illyricum on the east lay the extensive province of Mœsia, including the whole of the countries now known as Servia and Bulgaria, extending from the mountain barrier of the Balkan (Mt. Hæmus) to the Danube. This tract also was a recent addition to the Roman Empire. The conquest appears to have taken place in B.C. 29, when Marcus Crassus (the grandson of the triumvir), having been led across the Hæmus in pursuit of the Dacians and Bastarnæ, who had attacked the Roman allies, was not content with driving those nations back across the Danube, but reduced the Mœsians themselves to subjection.[5] It does not appear that Mœsia was at this time converted into a Roman province, but this must have taken place not long afterwards. It had certainly assumed the character of an ordinary province before the accession of Tiberius.[6]

At this time therefore the Danube formed the northern boundary of the Roman Empire, from its sources in the Hercynian forest almost to its mouth. The Peninsula of the Dobrutscha, formed by the abrupt deflection of the river to the north, when it has reached within 50 miles of the Euxine, was alone excepted; this barren and pestilential region was not annexed to the Roman dominion till a later period.[7] On the sea-coast the town of Tomi—so well known as the place of banishment of the unfortunate Ovid—marked the extreme limit of their power, and might be justly regarded as the farthest outpost of civilization.[8] The wild barbarians of the

[5] Dion Cass. li. 23–27.
On this occasion the name of the Triballi, which had disappeared from history for nearly three centuries; is once more mentioned.

[6] Tacit. *Annal.* i. 80. Augustus himself in the Monumentum Ancyranum (p. 35) speaks of having not only carried the frontiers of the Empire to the Danube, and driven back the Dacian army across that river, but that his own armies had followed them across the Danube and compelled the Dacians to submission; a circumstance not mentioned by any historian.

[7] At the time when the Itineraries were compiled, the Roman territory was extended to the Danube: the frontier town of Noviodunum was apparently situated near Tultcha (*Itin. Ant.* p. 226).

[8] Thus the poet's exclamation was no exaggeration:

Longius hac nihil est, nisi tantum frigus et hostis
Et maris adstricto quæ coit unda gelu.
Hactenus Euxini pars est Romana sinistri;
Proxima Basternæ Sauromatæque tenent.
Tristia, ii. 195–198.

The Greek colony of Istrus or Istro-

plains beyond were in the habit, as the poet tells us, of carrying their depredations up to the very walls of the city.[9]

§ 7. North of the Danube there were only nomad or half-civilized tribes, inhabiting the vast plains of Hungary and Southern Russia; and known to the Romans only by their occasional irruptions into the adjoining provinces, and the hostilities to which these incursions gave rise by way of reprisals. The principal of these nations at the period we are now considering were the Dacians, the Bastarnæ, and the Sarmatians, more commonly known to the Romans by the vague term of Scythians. The Dacians occupied the whole of what now forms the southern part of Hungary, the Banat and Transylvania: they appear to have been at this time gathering strength under a king named Bœrebistas, and had reduced or exterminated some of the neighbouring tribes,[1] but the more prominent part which they henceforth assumed in Roman history was probably owing principally to the immediate proximity in which they now found themselves to the Roman frontier.[2] The question of the relation in which the Dacians stood to the Getæ, whom we find in possession of these same countries at an earlier period, was one on which there existed considerable difference of opinion among ancient writers: but the prevailing conclusion was that they were only different names applied to the same people.[3] Even Strabo, who describes them as distinct, though cognate tribes, states that they spoke the same language.[4] According to his distinction the Getæ occupied the

polis was indeed situated 250 stadia farther north; and was certainly still in existence, but it seems to have been at this time a place of little importance (it is called a πολίχνιον by Strabo, vii. p. 319), and was not occupied by the Romans.

The site of Tomi seems to be now clearly established at Kustendje (the Constantiana of Procopius), one of the best ports along this line of coast.

[9] Ovid. *Tristia.*

[1] Strabo, vii. 3, p. 304.

[2] All readers of Horace are familiar with the prominent manner in which the "rugged Dacian" (Dacus asper) figured in the imagination of the Romans of his day among the fierce barbarians still hanging on the outskirts of the Empire (Horat. *Carm.* i. 35, 9; ii. 80, 18; iii. 6, 14, 8, 18). Hostilities were carried on with them on several occasions during the reign of Augustus, but with no important result.

[3] Strabo, vii. p. 304; Dion Cass. li. 22.

[4] Strabo, *l. c.*

more easterly regions adjoining the Euxine, and the Dacians the western, bordering on the Germans. Probably the name of Getæ, by which they were originally known to the Greeks on the Euxine, was always retained by the latter in common usage: while that of Dacians, whatever be its origin, was that by which the more western tribes, adjoining the Pannonians, first became known to the Romans.[5]

The Bastarnæ, who had already become known by name at least to the Romans as early as B.C. 168, when they furnished an auxiliary force to Perseus, king of Macedonia, and who now reappear as the neighbours and allies of the Dacians, are a people of whom very little is really known. They are distinctly termed by Dion Cassius a Scythian (meaning probably a Sarmatian) race; but Strabo says of them that they adjoined the Germans and were *almost* of German race themselves: and the same conclusion is adopted by Tacitus, who though including them among German nations intimates some doubt as to whether they were really Germans or Sarmatians. Other writers describe them as Gauls, or of Celtic race.[6] Their place of abode at this period is not clearly defined; but they appear to have been situated east of the Carpathians, between them and the Sarmatian people called by Strabo the Tyrigetæ.[7]

§ 8. The tract adjoining the lower course of the Danube on the north, and extending from thence along the coast of the Euxine to the Borysthenes, seems to have been held at this period entirely by Sarmatian tribes. These pressed closely on the

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[5] The name of Dacians is first found in Cæsar (*B. G.* vi. 25), where he speaks of the Hercynian Forest as extending along the Danube to the confines of the Dacians and Anartians. He therefore appears to have considered them as immediately adjoining the Germans on the east.

[6] Dion Cass. li. 23; Strabo, vii. p. 306; Tacit. *Germ.* c. 46. For a full discussion of the question concerning the Bastarnæ, and the different passages of ancient writers relating to them, see Zeuss, *Die Deutschen*, pp. 127–130; Ukert, *Geogr.* vol. iii. pt. ii. pp. 427, 428; Schafarik, *Slavische Alterthümer*, vol. i. p. 393.

[7] Strabo, *l. c.* But the Peucini, whom all writers agree in associating with the Bastarnæ, are described by him as inhabiting, and deriving their name from, the island of Peuce at the mouths of the Danube. Ovid also speaks of the Bastarnæ and Sauromati as inhabiting the country immediately beyond Tomi (*Tristia*, ii. 198).

Roman outposts in this quarter: Tomi, as we learn from the unhappy Ovid, was assailed by Sarmatian as well as Getic marauders, and even the population of the town was composed in great part of Sarmatians as well as Getæ.[8] Beyond the mouths of the Danube the Romans seem to have had little intercourse, and certainly exercised no political influence over the population. At the mouth of the Borysthenes indeed the Greek colony of Olbia or Olbiopolis still maintained its position, and must have continued to carry on a considerable amount of trade with the interior. In like manner the little kingdom of the Bosporus still subsisted at the entrance of the Sea of Azov and retained a nominal independence, though acknowledging the supremacy of the Roman Emperors.[9] It continued to preserve some tincture of Greek civilization down to a late period.

§ 9. Returning to the south of Mœsia, the two important regions of Macedonia and Thrace were very differently situated in their relations to the Roman Empire. Macedonia had long been reduced to the condition of a Roman province; the extent of which however considerably exceeded the limits of Macedonia properly so called. On the west it comprised a considerable part of what had previously been reckoned as Illyricum, so as to extend to the Adriatic and include the two important points of Dyrrhachium and Apollonia: while towards the east the coast-line of Thrace along the Ægean, as well as the Thracian Chersonese, were also annexed to the province of Macedonia. The whole of Thessaly also was subject to the same jurisdiction. The province was traversed

[8] Ovid, *Tristia*, ii. 191. The Iazyges, a Sarmatian tribe, who are first mentioned among the barbarian nations in this quarter, with whom Mithridates entered into alliance (Appian, *Mithridat.* c. 69), reappear in Ovid, and were apparently at this period one of the most powerful branches of the Sarmatians.

Another name found in Appian, in the same passage, the Coralli, also recurs in Ovid in one passage only, in which he adds the epithet "flavi" (*Ex Ponto*, iv. 2, 37).

[9] This is clearly proved by their coins, which form an unbroken series from the time of Augustus to that of Constantine. They bear the head of the reigning Roman emperor on the one side, and that of the king of Bosporus (with the title of Βασιλευς) on the other.

from one extremity to the other by the Egnatian way, one of the most important highways in the Empire, leading from Dyrrhachium and Apollonia to the Hellespont, and thus forming the main line of communication between Italy and the Asiatic provinces. It had not however as yet been regularly constructed any farther than Cypsela on the river Hebrus.[1]

Thrace on the contrary had not at this period been regularly incorporated with the Roman Empire. The southern coast, as we have just seen, had been annexed to the government of Macedonia: the rest of the country continued under the rule of native princes, who acknowledged the supremacy of the Roman Emperors, while retaining the title of king, and the control of their internal administration. Before the accession of Augustus, and especially during the Civil Wars, we find the Roman governors of Macedonia engaged in almost continual hostilities with some of the Thracian tribes, among whom the Bessi and the Odrysæ seem to have at this time held the predominant place. Ultimately the latter obtained the upper hand, and having had the sagacity to attach themselves to the Roman alliance became masters for a time of all Thrace. Their king Rhœmetalces, who was established on the throne by Augustus, retained his power for a considerable number of years, and appears to have reduced the Thracian tribes to a state of comparative tranquillity.[2] But the dissensions between his successors led to repeated interference on the part of Rome, and Thrace was ultimately reduced to a Roman province under the reign of Claudius. The flourishing city of Byzantium was never subject to these Thracian princes

[1] Strabo speaks of the Egnatian Way as *βεβηματισμένη κατὰ μίλιον καὶ κατεστηλωμένη μέχρι Κυψέλων καὶ Ἕβρου ποταμοῦ* (vii. 7, p. 322), in a manner which must refer to his own time. Cicero indeed at a considerably earlier period, calls it "via illa nostra, quæ per Macedoniam est *usque ad Hellespontum* militaris" (*Orat. de Provinc. Consular.* c. 2, § 4). But it may have been opened for military purposes without having received the complete finish to which Strabo refers: or the words of Cicero may not be intended to be construed strictly.

[2] Dion Cass. liv. 20, lv. 30; Tacit. *Annal.* ii. 64.

and still retained under the Roman Empire its nominal independence and autonomy.[3]

Greece, with the exception of Thessaly (which, as we have seen, was united with Macedonia), constituted a Roman province under the name of Achaia.[4] A large part of the cities indeed enjoyed a nominal autonomy, of which Athens affords a well-known example, but they were subject to Rome for all but municipal purposes. The greater part of the country had already fallen into a state of depopulation and decay, which afforded a melancholy contrast with its former greatness. The newly founded Roman colonies constituted almost the only exceptions, among which Corinth held the chief place, and after its restoration by J. Cæsar rose rapidly a second time to be one of the most flourishing commercial cities in the Mediterranean. Delos, which had for a time taken its place and become an important emporium of trade, especially as the great central mart of the slave trade, appears never to have recovered the blow it sustained during the Mithridatic War, and was still in a decayed condition in the time of Strabo.[5] Some of the other small islands of the Ægean were rendered familiar by name to the Romans from their being frequently used as places of banishment for political exiles.[6]

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[3] It retained this position till the reign of Severus, when, having sided with his rival Pescennius Niger, it sustained a memorable siege of three years, after which its walls were destroyed, and it was reduced to a state of comparative insignificance till the time of Constantine (see Gibbon, c. 5).

[4] It is singular that Greece did not, for a long time after its conquest, constitute a separate province, but was either united with, or treated as a mere dependency of, Macedonia. It was not definitely organised as a separate province till the reign of Augustus. See Marquardt, *Handbuch der Römischen Alterthümer*, vol. iii. pp. 121–128; Hertzberg, *Gesch. Griechenlands unter der Römer*, vol. i. p. 504.

[5] Strabo, x. p. 486. Delos had been made a free port by the Romans after the defeat of Perseus in B.C. 187; apparently with a view to injure the trade of Rhodes. Polyb. xxxi. 7, § 10. But its great commercial prosperity did not begin till after the fall of Corinth. Concerning its great importance and prosperity at this period, see Cicero, *Orat. pro Leg. Manil.* 18, § 55.

[6] Juvenal, *Sat.* i. 73; vi. 563; x. 170. Tacit. *Annal.* ii. 85; iii. 68; iv. 21, 30, &c. The province of the islands (Insularum provincia) was not constituted till a much later period. At this time the Cyclades were apparently included in Achaia, and the Sporades and Asiatic Islands in the province of Asia. The important island of Crete was, by a singular anomaly, annexed for administrative purposes to the Cyrenaïca.

§ 10. The Roman dominions in Asia had received no considerable addition, since they were first extended to the Euphrates and the frontiers of Armenia, by the arms of Lucullus and Pompey. But within those limits many changes had taken place, and their political relations with the native princes still continued in an unsettled state. Many of these changes had resulted from the Civil Wars of the Romans: princes and dynasts were dethroned or restored, according as they favoured the one side or the other, and provinces transferred from one petty sovereign to another at the will of the victorious leader. But it is unnecessary here to follow these successive arrangements, which for the most part had a mere transitory political effect, without permanently affecting the geographical boundaries of the countries in question. A very brief glance at these relations, as they subsisted in the reign of Augustus, will suffice for our present purpose.

The Roman province of Asia was far from including the whole of what we are now in the habit of designating as Asia Minor. As originally constituted, it corresponded to the dominions of the kings of Pergamus, in the enlarged form that these had assumed after the defeat of Antiochus the Great, when the Romans had rewarded the support of Eumenes in the war, by extending his limits to the Taurus. The monarchy thus created was left by the will of Attalus III. to the Roman people (B.C. 133), and after the defeat of Aristonicus was incorporated as a Roman province, B.C. 129. It included the whole of Mysia and Lydia, with Æolis, Ionia and Caria, except a small part which was subject to Rhodes, and the greater part, if not the whole of Phrygia. A portion of the last region was however detached from it, and after various fluctuations of boundaries, that of the Roman province of Asia was fixed so as to comprise the three districts of which Laodicea, Apamea, and Synnada were the capitals, excluding the eastern and south-eastern portions, which were annexed to Galatia.[7]

[7] For a more detailed view of the provinces of Asia Minor at this period I must refer my readers to the excellent maps by Dr. C. Müller of the

§ 11. Bithynia had in like manner been formed in the first instance out of the kingdom of the same name, which had passed, after the death of its last monarch, Nicomedes III., in B.C. 76, into the hands of Rome. It received, however, after the defeat of Mithridates the Great, a material accession of territory, and as constituted at that period by Pompey, it extended along the shores of the Euxine as far as Themiscyra, thus including the whole sea-coast of Paphlagonia, with a part of that of Pontus. A petty dynasty of princes still continued to rule over the interior of Paphlagonia, which was first united to the Roman province by Augustus.

The rest of the kingdom of Pontus was not incorporated with the Roman dominions after the defeat of Mithridates, or even after that of Pharnaces by Cæsar. It still continued to be subject to the rule of a dynasty of princes, originally selected by the Roman Emperors, and virtually dependent on them, but still retaining full powers of local administration. At the time of the accession of Augustus it was governed by a Greek named Polemon, who had been appointed by Antony, but was retained in his power by Augustus. This he transmitted after a tranquil reign to his widow Pythodoris, from whom it passed to their son, Polemon II., at whose death, in the reign of Nero, A.D. 63, this part of Asia was for the first time organized as a Roman province under the name of Pontus Polemoniacus. The two last kings had materially extended their dominion towards the east and north, and had reduced the wild tribes that inhabited Colchis and the eastern coasts of the Euxine to a nominal submission: the first Polemon had also made himself master of the Bosporus, and the Greek cities at its entrance. But no attempt was made by the Romans to retain these conquests; their dominion along the Euxine never appears to have extended farther than the confines of Colchis.[8]

Kingdoms of the Successors of Alexander in Dr. Smith's Atlas of Ancient Geography, pl. 5, 6.

[8] Strabo, xi. 2, p. 496. The tribes along the coast from the borders of Colchis to those of the Greek settlements on the Bosporus (the region occupied in modern times by the Cir-

South of Bithynia lay the province of Galatia, also one of the most recent additions to the Roman Empire. This region had continued, from the time of its first occupation by the Gauls to that of Cæsar, to be governed by chiefs with the title of tetrarchs, each presiding with quasi-regal authority over a portion of the country. But after the death of Cæsar, Deïotarus made himself king of the whole country, and his successor, Amyntas, who was appointed by Antony, received from the triumvir a large accession of territory, including Lycaonia, Isauria, Pisidia, a part of Phrygia, and Cilicia Trachea. Having conciliated the favour of Augustus, Amyntas remained in possession of these dominions till his death in B.C. 25, but on that event his kingdom was put an end to, and the provinces subject to his rule were incorporated with the Empire under the general name of Galatia, with the exception of Cilicia Trachea, which was handed over to Ariobarzanes, king of Cappadocia. Thus the province of Galatia, in the Roman sense of the term, was far more extensive than the limited region previously known by that name, and extended from the confines of Bithynia and Paphlagonia to the range of Mount Taurus.[9]

§ 12. Cappadocia, an extensive province occupying the eastern portion of the great interior table-land of Asia Minor, still continued to be ruled by its native dynasty, who had earned the favour of the Romans by their steady support in the wars against Mithridates and Tigranes: an alliance which was however almost forced upon them by circumstances, those monarchs being their most dangerous enemies. Cappadocia at this time extended eastward to the Euphrates so as to include the fertile district of Melitene, between that river and the chain called Anti-Taurus.[1] Armenia Minor, lying also

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cassians) are described by him as a race of lawless pirates, whose depredations the Roman governors took little pains to restrain. In the reign of Hadrian, as we learn from Arrian (*Periplus Maris Euxini*, § 26), Dioscurias was still the limit of the Roman dominion on this side.

[9] See Note B, p. 200.

[1] Strabo, xii. 1, p. 534.

on the west of the Euphrates between Cappadocia and Pontus, was not reckoned to belong to the kingdom of Cappadocia, though actually held by the last king Archelaus. After the death of this monarch in A.D. 17, his hereditary dominions were converted into a Roman province:[2] but Armenia Minor remained a separate and nominally independent sovereignty at least till the reign of Vespasian.

In the south-west corner of Asia Minor the districts of Lycia and Pamphylia may be regarded as practically forming one province, though they were not formally united as such until the reign of Claudius.[3] The cities of Lycia indeed continued in the time of Augustus to retain in name at least their independence, and to form a league for their self-government: but they were under the protection of the Roman authorities, and doubtless in great measure subject to their control.[4]

Cilicia, a country clearly marked out by nature, and inhabited by a people who formed a separate nation from the time of Herodotus, had nevertheless undergone strange vicissitudes in its political condition. It first came in contact with the Roman arms on account of the piratical incursions of its inhabitants. These gave occasion to a Roman prætor, M. Antonius, being sent against them as early as B.C. 103, and we subsequently find repeated mention of Cilicia being assigned as a province to Roman generals. But this was merely as the theatre of hostilities: a province of the name was first constituted in B.C. 75, by P. Servilius Isauricus, who subdued the Isaurians, and followed up his victory by reducing to submission the rugged mountain country known as Cilicia Trachea. The rich and fertile tract forming the eastern portion of Cilicia, and known as Cilicia Campestris, was at this period still

[2] Tacit. *Annal.* ii. 42; Strab. *l. c.*

[3] Sueton. *Claud.* 25.

[4] The condition of the Lycian cities at this period, as forming a federal league but a Roman dependency, is well illustrated by their coins, which bear the head of Augustus, but without his name or imperial title; while on those struck under Claudius the full imperial titles immediately appear. (See Warren, *On Greek Federal Coinage*, p. 38.)

subject to the kings of Syria, who retained possession of it till the time of Pompey. That general wrested it from the hands of Tigranes, king of Armenia, and united it with the portion already occupied by the Romans (B.C. 64). At this time the province of the name comprised in addition numerous outlying districts—Pamphylia, Pisidia, Isauria, Lycaonia, a large part of Phrygia, and the island of Cyprus. Such was the extent of the Roman province of Cilicia, when Cicero was appointed to the charge of it as Proconsul, B.C. 51. But these arrangements were broken up by M. Antony: the extraneous districts were finally separated from Cilicia, and that province reduced within its natural limits. But the western portion, or Cilicia Trachea, was handed over by Augustus to Archelaus, king of Cappadocia: and was not reunited to the Roman Empire till the reign of Vespasian. A petty dynasty of native kings, of whom the names of Tarcondimotus and Philopator alone are known in history, still maintained its nominal sovereignty in the mountain tracts of Amanus, on the eastern frontier of Cilicia, but the boundaries of their territory are very imperfectly known. Cyprus, which had for a time been united with Cilicia, was constituted by Augustus a separate province, and retained its distinct government from that time forwards.

The province of Commagene, on the west bank of the Euphrates, which had been subject to the Seleucidan kings of Syria, was at this period still governed by a native dynasty, though under the protection of Rome. It was united to the Empire for a time by Tiberius, but again placed under a native ruler by Caligula, and finally reduced to a province by Vespasian in A.D. 73. Its capital was Samosata, a strong town on the Euphrates, in a position commanding the passage of the river, which rendered it an important point in the wars between the Romans and Parthians.[5]

[5] It is first mentioned in history during the campaign of M. Antony against the Parthians (B.C. 36); and its military importance is attested both by Strabo and Josephus (Strabo, xvi. p. 749; Joseph. *Ant.* xiv. 15, § 8; *Bell.*

§ 13. The extensive province of Syria had been subject to Rome, and ruled by Roman governors, ever since its conquest by Pompey in B.C. 64. But though it was organized as a Roman province, and is repeatedly mentioned as such, it was far from being brought under one uniform and regular administration; and its condition at this period was extremely complicated. Judæa, though it had been twice conquered, first by Pompey, and a second time by M. Antony, was at this time still governed by its own king, Herod, commonly called the Great, though tributary to the Roman Emperor, and acknowledging his supremacy.[6] Damascus again belonged to a native prince of the name of Aretas, of Arabian origin, who held also Bostra, with the surrounding district, and Petra, but was certainly tributary to Rome. Native dynasties also reigned in Chalcis, Emesa, and the district of Abilene. The Roman policy indeed appears to have been at this time to maintain all these petty princes in nominal sovereignty, but practically dependent upon Rome. It was only by slow degrees that they were successively absorbed under the imperial administration, and it was not till the reign of Trajan that the province of Syria could be considered as forming a complete organic whole.[7] The outlying city of Palmyra—the name of which is first mentioned during the wars of M. Antony in Syria—was certainly at this period independent and preserved a position of neutrality between the Romans and Parthians, while it carried on trade with both.[8] It does not appear however to have as yet risen to a place of great importance, as its name is

Jud. vii. 7, § 1). It had a bridge over the Euphrates, apparently the only one between the Zeugma and the narrow gorges of Mt. Taurus, from which the river emerges about 30 miles above Samosata. This came to be one of the most frequented passages of the Euphrates under the Roman Empire. The modern town still retains the name of Samsat.

[6] Herod reigned over Judæa, from the time of his confirmation on the throne by Augustus in B.C. 30, till his death in B.C. 4.

[7] For the details, see Marquardt, *Handbuch der Römischen Alterthümer*, Th. iii. pt. i. pp. 175–194; who has worked them out with great care and diligence.

[8] Appian, *B. Civ.* v. 9; Plin. *H. N.* v. 25. This is clearly implied by Pliny as continuing to be the case even in his time.

not mentioned by Strabo. The period of its prosperity dates only from the time of Hadrian, by whom it was united to the Roman province.

§ 14. Beyond the Euphrates to the east lay the extensive, and still powerful, monarchy of the Parthians, who at this period held undisputed rule over Mesopotamia and Syria, as well as the broad regions beyond, which had previously formed part of the Persian Empire. Media Atropatene (the modern province of Azerbijan) was, as we have already seen,[9] held by a separate dynasty of rulers, who were however the constant allies of the Parthians, and probably to a great extent dependent upon the greater monarchy. Armenia on the contrary may be considered as being in some degree dependent upon the Roman Empire, though always retaining its own kings. But after the expedition of M. Antony to Artaxata, and the deposition of Artavasdes, the succeeding monarchs were for some time appointed by the Roman emperors, and though these were repeatedly expelled by their own subjects, or by the neighbouring kings of Parthia, it is clear that both Augustus and Tiberius not only claimed, but repeatedly exercised, the right of nomination to the vacant throne.[1] The national feeling of the Armenians however inclined rather to the Parthians than to the Romans, and the possession, or rather the supremacy over this important province continued to be the subject of repeated contests between the Roman and the Parthian monarchs, from the time of Augustus to that of Trajan.

With the Parthians themselves Augustus had the wisdom to avoid any open collision, and while shrinking from taking up the project of the dictator Cæsar to avenge the defeat of Crassus by a war with Parthia, he was able to gratify the pride of the Roman people by procuring the return of the standards taken on that occasion. This result was greatly facilitated by

[9] See the preceding Chapter, p. 132.
[1] See a summary of these relations in Tacitus (*Annal.* ii. 3, 4, and 56).

the domestic dissensions of the Parthian royal family, and the competition of rival claimants for the throne. They even consented to accept as their king a Parthian prince who had spent many years at the court of Augustus, and might therefore be looked upon in some degree as appointed by that emperor.[2] The circumstance was celebrated with triumph by the Romans, and from this period it became a favourite policy with succeeding emperors to interfere whenever it was possible, in the disputes that were continually arising with respect to the Parthian succession. But no attempt was made till the reign of Trajan to extend the Roman frontier on this side by any permanent conquests.

§ 15. It is singular that Strabo[3] speaks of the establishment of the Parthian empire as one of the causes that had contributed to the extension of geographical knowledge in his day. The real effect would appear to have been just the reverse. By destroying the Greek monarchy in the provinces of Central and Upper Asia, they cut off to a great extent the communications of all the interior of that vast continent with the Greek world, and isolated almost completely the provinces in the far East, on the borders of Bactria and India, which still retained some traces of Hellenic civilization. The Greek element indeed, with its characteristic vitality, continued to maintain itself under the Parthian monarchy, as it did subsequently under the Turks. Seleucia on the Tigris, a city of Greek origin, and in great part peopled with Greeks, was an opulent and thriving commercial city, and doubtless maintained relations more or less frequent with the distant provinces of the empire. The names of two Greek writers are also preserved to us, who were born in cities subject to the Parthian rule, and who undoubtedly contributed something to geographical knowledge. APOLLODORUS of ARTEMITA (a town of Assyria) wrote a history of Parthia, which is repeatedly quoted by Strabo,[4] and

[2] Tacit. *Annal.* ii. 1, 2.
[3] Strabo, i. 2, p. 14; xi. 6, p. 508.
[4] There is no clue to the date of this Apollodorus. When Forbiger (*Geogr.* vol. i. p. 356, note) calls him a contemporary of Posidonius, this is a mere

from which we should doubtless have derived much interesting information had it been still extant: but though Strabo refers to him as having thrown much additional light upon the geography of Upper Asia, especially of Hyrcania, Bactriana, and the neighbouring countries,[5] it does not appear that Strabo himself had derived much benefit from his work. The only instance in which we distinctly learn that he had improved upon the knowledge of previous authors, was in regard to the river Ochus, the modern Attrek, which had been unknown to the earlier geographers, while others had confounded it with the Oxus. As it flowed through Hyrcania, and in the immediate neighbourhood of the original province of Parthia, it was repeatedly mentioned by Apollodorus.[6] The same author appears to have given, incidentally at least, an account of the Greek monarchy in Bactria, which would have been of especial interest to us:[7] but there is no evidence of Strabo having any additional geographical information concerning those countries, beyond what he derived from Eratosthenes and the historians of Alexander.

§ 16. Another writer, not referred to by Strabo, but frequently cited by Pliny, is ISIDORUS of CHARAX, a city of Babylonia, near the head of the Persian Gulf. He appears to

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conjecture; but as it is not very likely that he would have written a history of the Parthians before they had attained to their great power, he may be fairly presumed to have lived within the first century B.C. His native place of Artemita was situated on a river called Silla, at a distance of 500 stadia from Seleucia. It is mentioned as a place of consideration both by Strabo (xvi. p. 744) and by Isidore of Charax (§ 2), who distinctly terms it a Greek city.

[5] Strabo, ii. 5, § 12, p. 118.

[6] Strabo, xi. pp. 509, 515. It is not to be wondered at, that the Ochus should have been unnoticed by earlier writers, as it is really a stream of no great importance. In modern times the Attrek, though it has been suddenly brought into notoriety in connexion with the advance of the Russians in Central Asia, was until lately very imperfectly known to geographers, and was confounded with the Tejend (the river of Meshed) which does not flow into the Caspian (see Wilson's *Ariana*, p. 146). The Attrek rises in the same range of hills as the Tejend, but has from the first a westerly course, and falls into the south-east corner of the Caspian, about fifty miles north of Astrabad. The recent travels of Mr. V. Baker in this region have thrown much light on its geography, and at the same time have shown how imperfectly it was previously known (Baker's *Clouds in the East*, 8vo, 1877). See also a valuable paper by Capt. G. Napier in the *Journal of Geogr. Soc.* vol. xlvi.

[7] Id. xi. p. 516.

have written in the reign of Augustus, though the statements on this subject are very confused and contradictory.[8] He is quoted by Athenæus as having written a work called Παρθίας περιηγητικὸς, in which he gave full details concerning the pearl fishery,[9] so that it could not be a mere dry geographical treatise. But he must also have composed a more general work on geography, as Pliny repeatedly cites him as an authority concerning measures and distances in other parts of the world,[1] and regards him as having more recent and trustworthy information than Artemidorus and other earlier writers. There is still extant under his name a very brief treatise called in our manuscripts Σταθμοὶ Παρθικοὶ, which, as its title implies, is nothing more than an itinerary, giving the distances, first, from Zeugma on the Euphrates to Seleucia on the Tigris, then from that city across the passes of Mount Zagrus to Ecbatana, and thence by Rhagæ and the Pylæ Caspiæ, through Hyrcania, Parthia, Margiana, Aria, and Drangiana to Alexandria or Alexandropolis in Arachosia,[2] where the Parthian empire ended. It has every appearance of being an extract, or abridged summary from his larger work: and in the great dearth of information concerning the countries it traverses, is a document of some value to us for the correction of our other authorities. But it is in itself very meagre and slight, and the paucity of details concerning the route eastward from

[8] They are fully considered and examined by C. Müller in the Prolegomena to his *Geographi Græci Minores* (pp. lxxx–lxxxv), who supposes him to be the writer meant by Pliny, who was sent forward by Augustus to explore the eastern regions, when his grandson Caius Cæsar was about to lead an expedition into those countries. The name of this author, who is called by Pliny "terrarum orbis situs recentissimum auctorem," is given in our editions as *Dionysium*, and has been erroneously supposed to be the same with Dionysius Periegetes. This error had been already exposed by Bernhardy (ad Dionys. Perieg. p. 496), who suggested that Isidorus was the person really meant, a conclusion adopted by C. Müller. Be this as it may, all indications seem to concur in placing our author in the reign of Augustus, or at all events very little after it.

[9] Athenæus, iii. p. 93 d.

[1] Plin. *H. N.* ii. 242, 246; iv. 102, 121; v. 40, &c. All these citations refer to questions of general geography, such as the dimensions of Europe, Africa, &c.

[2] This Alexandria was undoubtedly identical with the modern Candahar, which is still the capital of the adjacent regions.

Seleucia, as compared with the portion west of the Tigris, seems to prove how very imperfect was the information available at this period concerning the provinces of Upper Asia. Nor do we find that the details contained in this little treatise—such as they are—were made use of by subsequent geographers. Strabo was certainly unacquainted with the writings of Isidorus, whom he never mentions, and Pliny, though repeatedly referring to his larger work, never cites his authority in regard to the Parthian provinces.

§ 17. The Greek dynasties that had subsisted for a period of nearly two centuries in Bactriana and the adjoining provinces south of Paropamisus, had long before this been overwhelmed by the irruption of a race of barbarians from the north,[3] and probably the last traces of Greek civilization were by this time extinct. Beyond the Parthian Empire to the north and east there was nothing to be found but Scythians and Indians. With the Asiatic tribes included by the Greeks under the former appellation, it is not likely that the Romans at this period held any communication whatever: the Scythians who are mentioned by historians as well as poets[4] as sending embassies with offerings of friendship to Augustus, were in all probability European Scythians from the neighbourhood of the Euxine. But it was otherwise with the Indians. What was at this period the extent and character of the commercial relations with India carried on by the Romans, or rather by the Alexandrine Greeks under their authority, is not very clearly known, though it was certainly not inconsiderable. But we learn from Dion Cassius and Strabo that during the sojourn of Augustus at Samos in B.C. 20 among the numerous embassies

[3] The date of this event, as of almost all others connected with the history of these Græco-Bactrian dynasties, is very uncertain; but the conquest of Bactria proper by the Scythian tribes, who are termed by Strabo Sacæ (xi. 8, § 2), appears to have taken place about B.C. 128. Greek rulers, however, certainly maintained themselves in the districts south of the Hindoo Koosh to a considerably later date; and it is probable that their dominion in these provinces was not finally overthrown till about 90–80 B.C.

[4] Sueton. *Oct.* 21; Horat. *Carm.* iv. 14. 42. In the *Monumentum Ancyranum* (p. 36) the Scythians are mentioned in conjunction with the Basternæ and Sarmatæ.

that came to do him honour was one from "the Indians," sent by a king named Porus, who professed to be lord over six hundred (!) other kings. They brought, among other gifts, a gigantic serpent, and some real tigers, which were said to be the first ever seen by the Romans.[5] One of the deputies also astonished the Greeks at Athens by burning himself alive on a funeral pile, in the same manner as Calanus had done when returning with Alexander from India. We have no clue to the part of India from whence the embassy was sent, or the real name of the prince who sent it—that of Porus being evidently only a Greek appellation: but it was probably the reduction of Egypt under the Roman authority that had made the Indians acquainted with the fame of the new ruler of so large a portion of the East.[6]

§ 18. But although the Romans had acquired no real geographical knowledge of the far East in addition to that long possessed by the Greeks, they had yet heard the name at least, though in a very vague manner, of a people who gradually assumed an important place in geography—the Seres. There can be no doubt that this was owing to the extension of commercial relations, which had been the means of making them acquainted with silk, an article ever after in great request with Roman ladies, and which gradually became one of the most important objects of trade. But its real nature, as well as the country from whence it came, were still equally unknown. The well-known line of Virgil—

Velleraque ut foliis depectant tenuia Seres [7]

[5] Dion Cass. liv. 9; Strabo, xv. p. 720. See Note C, p. 201.

[6] Mr. Merivale seems inclined to doubt the reality of this embassy, but I can see no ground for such a suspicion. Nicolaus of Damascus, who is referred to by Strabo, had himself seen and conversed with the envoys at Antioch, and is a trustworthy authority.

It would appear, indeed, as is not improbable, that this embassy was followed by others; as we find Augustus himself boasting that repeated missions had been sent to him from Indian monarchs. "Ad me ex India regum legationes *sæpe* missæ sunt, nunquam antea visæ apud quemquam Romanorum principem" (Monum. Ancyran. p. 36, ed. Zumpt.).

[7] *Georg.* ii. 121. It is remarkable that this line is the earliest notice of the Seres, and the production of silk, that is found in any ancient writer, though the name is here introduced as one that would be familiar to his readers. Horace also uses the term

represents the popular notion, which continued prevalent in the time of Pliny, that it was stripped from the leaves of trees. The Seres from whom it came were probably regarded as an Indian nation by those at least who troubled themselves to have any definite idea upon the subject. But whether it was brought by sea to Alexandria, or overland through the Parthian dominions, we have no information.[8] The latter hypothesis is, however, the most probable.

§ 19. With Arabia the Romans had as yet had very little intercourse. Even the district immediately south of Palestine, commonly known as Arabia Petræa, which was subsequently annexed as a Roman province, was at this period still subject to a native prince. It was occupied by a tribe named by the Greeks and Romans Nabatæi, and their capital city of Petra was already a place of considerable trade, the resort of numerous merchants, both Romans and Greeks,[9] but its great commercial prosperity belongs, like that of Palmyra, to a later period. The expedition made by Ælius Gallus in the reign of Augustus, with the view of reaching the fertile districts of Arabia Felix, deserves a separate notice.

Egypt passed under the Roman dominion, and was converted into a Roman province without any change in its boundaries. These are indeed so strongly marked by nature as to be hardly susceptible of alteration. Towards the south alone the limit between Egypt and Ethiopia might admit of some doubt; but here also the Romans acquiesced in the esta-

"Sericæ sagittæ" (*Carm.* i. 29, 9), and repeatedly alludes to the Seres as one of the barbarian races hanging on the skirts of the Roman Empire (*Carm.* i. 12, 56; iii. 29, 27; iv. 15, 23); but all these notices evidently refer to the nomad tribes of Central Asia. It is singular that Horace has no mention of silk.

Strabo alludes to the textures called Serica, which he describes as carded off the bark of certain trees (τοιαῦτα δὲ καὶ τὰ Σηρικά, ἐκ τίνων φλοιῶν ξαινομένης βύσσου, xv. i. p. 693). The account of Pliny (vi. 17, § 54) is more precise, but not more accurate.

[8] According to Florus (iv. 12, extr.), the Seres actually sent an embassy to Rome at the same time as the Indians, but this circumstance is not mentioned by any writer of authority; and the silence of Augustus, where he is enumerating all similar cases that had added lustre to his reign (Mon. Ancyr. *l.c.*), seems conclusive against its authenticity.

[9] Strabo, xvi. 4, § 21.

blished line of demarcation, and Syene became the frontier fortress of the Romans, as it had been under the Persian governors. Ethiopia was still entirely independent, and was governed by a queen named Candace, whose capital was at Napata, just below the fourth cataract, but who doubtless reigned also over the adjoining regions of Meroë.[1]

§ 20. West of Egypt, the fertile though secluded region of the Cyrenaïca, which still retained to a great degree the prosperity that it had enjoyed ever since the foundation of the first Greek colonies in that favoured land, had been long before united with the Roman Empire. Having been separated from the Egyptian monarchy after the death of Ptolemy Physcon in B.C. 117 it constituted a separate kingdom under his son Ptolemy Apion, who, at his death in B.C. 96, left it by his will to the Roman people.[2] It was not however formally reduced to a province till B.C. 67, when, after the conquest of Crete by Metellus Creticus, that island was united for administrative purposes with Cyrene, and the two together constituted one province. Strange as this arrangement appears, it continued unchanged till the time of Constantine. The valley of the Catabathmus formed the limit between Cyrenaïca and Egypt, while towards the west the province extended to the Altars of the Philæni,[3] which marked the frontier on the side of Africa.

The Roman province of Africa, as constituted under Augustus, was one of great extent, and included not only the district usually known under that name, from the Lesser Syrtis to Carthage and Utica, but the long tract of coast extending from the Lesser to the Greater Syrtis, where it met the

[1] Strabo, xvii. p. 820. The investigations of Lepsius have clearly established the site of Napata, which was situated at a place called Merawi, a few miles below the conspicuous isolated mountain called Jebel Barkal, at the foot of which are extensive remains of temples and pyramids, that belonged to the Ethiopian capital, though detached from it (Lepsius, *Briefe aus Aegypten*, p. 240).

[2] Liv. Epit. lxx.; Eutrop. vi. 9.

[3] Sallust. *B. Jugurth.* 19, 79. The legend from which this spot derived its name is first told by Sallust, but the name is already mentioned by Polybius (iii. 39) as marking the limit of the Carthaginian dominion.

Cyrenaïca at the Altars of the Philæni. It thus included not only the modern territory of Tunis, but great part of that of Tripoli also.[4] The whole of this latter district had formed part of the dominions of Carthage until after the Second Punic War, when it was wrested from their hands and consigned to Masinissa, together with Numidia and Gætulia. But after the defeat of Jugurtha it was again reunited with the province of Africa, which thus comprised almost exactly the former Carthaginian territory. Towards the south, the desert formed the natural boundary: but the outlying oasis of Cydamus (Ghadamis) appears to have acknowledged the Roman supremacy, and been regarded as belonging to the province:[5] while even the more remote Garamantes (the people of Fezzan) were made to feel the force of the Roman arms and compelled to a nominal submission.[6]

§ 21. The extensive regions of Numidia and Mauretania had undergone repeated changes in their territorial division. There is indeed no natural separation between the two: and the name of Numidians, which is only a corruption of the Greek Nomades, though adopted by the Romans and used as a proper name, could never have been a true ethnic appellation.

At the time of the Second Punic War the Numidians were divided into the two great tribes of the Massyli and the Massæsyli. The former occupied the territory from the river Tusca, which formed the limit of the Roman province of Africa, to the Ampsaga on the west;[7] while the Massæsyli

[4] The city of Leptis Magna, originally a Phœnician colony (Sallust, *B. J.* 78), was the capital of this part of the province, and held much the same prominent position as that of Tripoli at the present day. The only other towns in the region of the Syrtes, as it was sometimes called, were Œa, on the site of the modern Tripoli, and Sabrata, the ruins of which are still visible at a place called Tripoli Vecchio (Barth, *Wanderungen*, p. 277). The three together gave the name of the Tripolis of Africa to this region, as distinguished from the Pentapolis of Cyrenaïca. Hence the modern appellation.

[5] Roman inscriptions have been found at Ghadamis (see Barth, *Wanderungen*, p. 249); and it appears to have been connected by established caravan routes with Tacape and Leptis.

[6] See Tacitus (*Annals*, iv. 23, 26). The expedition of Cornelius Balbus against the Garamantes will be considered hereafter. (See p. 184.)

[7] The Tusca was a small stream, flowing into the sea at Tabraca, the site of which still retains the name of

extended from the latter river to the Mulucha, which separated them from Mauretania. As late as the Jugurthine War this river still formed the boundary between the kingdoms of Jugurtha and of Bocchus.[8] But in consequence of the part taken by Juba, the last king of Numidia, in the Civil War between Pompey and Cæsar, his kingdom was confiscated by the victor, and became a Roman province in B.C. 46. The historian Sallust was its first governor. But Juba II., the son of the preceding, having gained the favour of Augustus, was reinstated by him in his paternal dominions, in the general settlement of affairs after the death of Antony, B.C. 30. A few years afterwards however the emperor altered this arrangement and united the eastern portion of Numidia with the Roman Empire, while he gave Mauretania in its place to Juba, who thus ruled over the whole tract from the Atlantic Ocean to the river Ampsaga. The kingdom thus constituted naturally took the name of Mauretania, which was thus extended over the larger part of what had previously been called Numidia. It was not till the reign of Claudius (A.D. 42) that Mauretania, in this new acceptation of the term, was incorporated with the Roman Empire: it was then divided, on account of its great extent, into the two provinces of Mauretania Tingitana and Mauretania Cæsariensis, which were separated by the river Mulucha, that had previously formed the boundary between Mauretania and Numidia.

The extent of Mauretania along the Atlantic coast is not clearly defined, but it seems to have extended, nominally at least, as far as the point where the chain of Mount Atlas descends to the sea,[9] in about 30° N. latitude. The southern slopes of Mount Atlas, and the fertile, date-producing tract that intervenes between the foot of that range and the great

Tabarkah. It is about 50 miles east of Bona. The Ampsaga was the river which flowed by Cirta (Constantina), and entered the sea west of the conspicuous promontory called Tretum, now the Seven Capes.

[8] Sallust, *B. Jug.* 19, 92, 110.

[9] Pliny, however, has no account of the province beyond Sala, opposite the modern town of Sallee (in lat. 34°), and it is probable that there were no towns or settlements farther south.

desert of the Sahara, was the native abode of the Gætulians, an aboriginal race,[1] who had never owned more than a precarious and nominal allegiance to the Mauretanian and Numidian kings. This did not hinder their breaking out into frequent revolts, one of which, under the reign of Juba, was so serious that he was compelled to call in the aid of the Romans, and the Roman general Cornelius Cossus, who was sent against them, assumed the surname of Gætulicus in honour of his victory.[2] Unfortunately we have no details concerning this campaign, which might otherwise have thrown some light upon the very little known geography of these regions.

SECTION 2.—*Roman writers.—Juba.*

§ 1. IT would have seemed natural to suppose that while the Romans were thus extending their dominion, or carrying their arms into almost every part of the known world, their attention would have been strongly attracted towards the study of geography, and that we should have found numerous writings upon this subject. But so far from this being the case we find hardly any Roman author of note, who had either earned or deserved any reputation as a geographer. P. Terentius VARRO ATACINUS, a younger contemporary of his more celebrated namesake, wrote a free translation of the Argonautica of Apollonius Rhodius, which obtained a considerable reputation in his day: he was also the author of a poem on geography and cosmography in general, which is cited by Pliny among

[1] Sallust, writing from Punic authorities, distinctly tells us that the Gætulians and Libyans were the earliest inhabitants of Africa (*B. Jugurth.* c. 18), a statement that doubtless deserves more credit than the absurd fables by which he follows it up, in order to connect them with Hercules.

The relations of the Gætulians to the Numidian kings are well illustrated by the part they played during the Civil War in Africa (Hirt. *B. Afr.* 32, 35, &c.), as well as during that with Jugurtha (Sallust, *B. J.* 19, 80).

There can be little doubt that they were the same people whose descendants, under the name of Berbers and Tuaricks, still occupy the valleys of Mount Atlas, as well as the oases of the Great Desert.

[2] Dion Cass. lv. 28; Flor. iv. 12.

the authorities of which he had made use for this part of his work,[3] but we know almost nothing about it. Other treatises, cited under the names of Libri Navales, de Ora Maritima and Littoralia, or de Littoralibus, are by some ascribed to this Varro Atacinus, by others to M. Varro, the friend of Cicero and author of so great a variety of works, that they may well have comprised some of a geographical character: but nothing more is known concerning them.[4] CORNELIUS NEPOS also, who is frequently quoted by Pliny among his authorities for the geographical portion of his work, must have given considerable attention to geography, though we do not learn that he composed any treatise especially devoted to that subject. Among the statements for which he is cited as responsible is the strange story of the Indian navigators, who had been carried all round the north of Asia and Europe till they found themselves on the coast of Germany, and were sent by a king of the Suevi to Metellus Celer, who was at that time proconsul of Gaul.[5] He stated also that "a certain Eudoxus, sailing from Egypt in order to escape from king Ptolemy Lathyrus, and setting out from the Red Sea, had effected the navigation to Gades."[6] This entire perversion of a case, the real facts of which are known to us from Posidonius, is a sufficient proof how little value can be attached to these random stories.[7] But if such tales do little credit to the judgement of Cornelius Nepos, it must be added that he appears to have bestowed considerable pains on the collection of measurements and estimation of distances, for which he is frequently cited by Pliny.[8] Unfortunately we have no means of judging of the

[3] Plin. *H. N.* lib. i. in the Catalogue of authorities for books iii. iv. and v.

[4] On this subject, see the article VARRO in Dr. Smith's *Dict. of Biogr.* vol. iii. p. 1227.

[5] Plin. *H. N.* ii. 67, § 170. The same tale is more fully told by Mela, on the same authority, and he adds "Cornelius Nepos ut recentior, auctoritate sic certior" (iii. 5, § 45).

[6] "Nepos Cornelius auctor est, Eudoxum quendam sua ætate, cum Lathurum regem fugeret, Arabico sinu egressum Gades usque pervectum." Plin. *l. c.* § 169.

[7] Pliny himself in one passage censures him for the greediness with which he caught up idle tales (quæque alia Cornelius Nepos avidissime credidit, v. 1, § 4).

[8] *H. N.* iii. § 4; iv. 12, § 77.

sources from which his conclusions were derived, where they differed from those of earlier writers.

§ 2. The historian SALLUST (C. Sallustius Crispus) who, as we have seen, was the first governor of Numidia after it was reduced to a Roman province, took advantage of the opportunity to collect information, geographical as well as historical, concerning the adjoining regions, which enabled him to give, in his history of the Jugurthine war, an interesting summary of the geography of that part of Africa. But he tells us himself that he could obtain no satisfactory information concerning the nations of the interior.[9] He learnt only that above the Numidians (*i. e.* farther inland) were the Gætulians, part of whom were a settled race and dwelt in huts, others were uncivilized and without any fixed habitations: beyond them were the Æthiopians, and after that desert regions parched up by the burning sun.[1] From the citations of later authors he appears to have introduced similar geographical notices in the lost books of his Histories, but nothing has been preserved to us beyond a few isolated fragments. It appears that he described the Tigris and Euphrates as flowing from the same source, in the mountains of Armenia.[2]

§ 3. Another writer, apparently a contemporary of Sallust, but known to us only from the citations of Pliny, was STATIUS SEBOSUS, who appears to have made careful inquiries concerning the Oceanic coast of Africa, and the islands which lay off it. According to the information he was able to collect, the first of these was Junonia, situated 750 miles from Gades, to the west of which were Pluvialia and Capraria, and 250 miles farther, lying off the coast of Mauretania towards the south-west, the Fortunatæ, which bore the names of Convallis (or Invallis according to some MSS.) and Planaria.[3] It is impossible to identify these with certainty, but it is clear that

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[9] Sall. *B. Jug.* 17.
[1] Ibid. 19.
[2] Sall. *Hist.* iv. Fragm. 194, ed. Gerlach. But it may well be doubted whether the words "uno fonte" are to be taken in a literal sense.
[3] Plin. *H. N.* vi. 32, § 202.

some of them at all events must be referred to the group of the Canary Islands, to which the name of the Fortunatæ Insulæ was afterwards generally applied. Those previously known to Sertorius, as we have already seen, appear rather to have been the two islands of Madeira and Porto Santo.[4]

§ 4. A much more important contribution to geographical knowledge was the work of the younger JUBA, the second of the two Numidian monarchs of the name. Having been carried to Rome by the dictator Cæsar as a mere child, after the death of his father in B.C. 46, he received his education there, and devoted himself to study with such success that he soon came to be esteemed one of the most learned men of his day.[5] He became also the intimate friend of the young Octavian, who ultimately restored him to his father's kingdom, which he subsequently exchanged (as already mentioned) for the more extensive dominion of Mauretania. His principal work was a history or description of Africa,[6] a task for which his position gave him unparalleled advantages. It is frequently cited by Pliny, and appears indeed to have been one of the chief authorities upon which that author relied, both for the geographical description of the country, and for the natural history of the wild beasts with which Africa abounded. But as it is only in a few instances that Pliny directly cites his authority, we cannot justly estimate how much Juba really added to what was previously known. Of the interior of Africa indeed he appears to have had little more knowledge than his predecessors. But he was certainly the first author of the extraordinary theory concerning the origin of the Nile, which was adopted and received by several ancient authors. Accord-

[4] Other statements of Sebosus concerning the Gorgades or Islands of the Gorgons—those which were visited by Hanno—and the islands of the Hesperides, which he placed at 40 days' voyage (!) beyond them, are treated by Pliny himself as very vague and uncertain (Plin. *H. N.* vi. 31. § 201).

[5] He is called by Avienus (*de Ora Maritima*, v. 279),

Octaviano principi acceptissimus
Et litterarum semper in studio Juba.

Plutarch also terms him *ὁ πάντων ἱστορικώτατος βασιλέων* (*Vit. Sertor.* 9), and Athenæus (iii. p. 83 b.) *ἀνὴρ πολυμαθέστατος*.

[6] *Λιβυκά*. Plut. *Parallel. Minor.* 23; Athenæus (*l. c.*) cites it more generally as *τὰ περὶ Λιβύης συγγράμματα*.

ing to this account, which was given as the result of his special inquiries, the Nile had its source in a mountain of Lower (*i. e.* western) Mauretania not far from the Ocean: it almost immediately formed a lake, which contained crocodiles, and fish of the same species as were found in Egypt.[7] On issuing from this lake it buried itself for some days' journey, and flowed underground through a sandy and desert tract, till it reappeared in Mauretania Cæsariensis,[8] where it formed another and larger lake, distinguished by the same animals. It then lost itself again in the sands and pursued an underground course for twenty days' journey to the nearest Ethiopians, when it broke out again by the source which was called Niger. Thenceforth it separated Africa from Ethiopia, and its banks became fertile, covered with forests, and abounding in wild beasts; it then cut through the midst of the Ethiopians and assuming the name of Astapus, flowed onwards past Meroë and other islands, into Egypt.[9]

§ 5. Juba also made diligent inquiries concerning the Fortunate Islands, which, according to the information he obtained, were five in number, which he named Ombrios, Junonia, Capraria, Nivaria and Canaria, all of them obviously names given by voyagers or geographers, and all but one of Latin origin. No mention is made of their being inhabited, but they abounded in all kinds of fruits and birds, and some traces of buildings were found. Large dogs also were said to be found in great numbers on the island, called from that circumstance Canaria,[1] two of which were brought to the king. Date-palms also abounded on this island, though not in any of

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[7] He mentioned by name "alabetæ, coracini, et siluri," of which the first name is not found elsewhere in Pliny's work; the coracini and siluri were both abundant in the Nile, and the former even said to be peculiar to it. Plin. *H. N.* ix. §§ 44, 68; xxxii. § 56. The preciseness of this statement is very remarkable, whatever we may think of the inference drawn from it.

[8] This must of course refer to the inland portion of the province, south of the range of Atlas: though the name was usually applied only to the region adjoining the Mediterranean.

[9] See Note D, p. 201.

[1] This is obviously one of the etymological fancies, or fictions, so common among both Greek and Roman writers.

the others. Besides these Juba was the *discoverer* (if we may construe the expression of Pliny literally) of some islands off the coast of Mauretania, where he established a factory of purple, from which circumstance they derived the name of Purpurariæ.[2]

Besides his work upon Africa, Juba was author of a treatise on the geography of Arabia, which was also regarded by Pliny as one of the most trustworthy accounts of that country, and was the authority that he principally followed in describing it. It was dedicated to Caius Cæsar (the grandson of Augustus) when he was about to proceed on his expedition to the East (B.C. 1).[3] It is remarkable that neither this work, nor that on Africa, is ever alluded to by Strabo, who appears to have been wholly unacquainted with the writings of Juba.[4]

§ 6. But if the Roman writers contributed but little to the progress of geography, so far as related to the knowledge of distant countries and nations, the mere extension of the Roman Empire, and the gradual introduction of their improved system of organization and administration into all parts of their dominions must have added greatly to the accuracy and completeness of the knowledge already possessed of the vast portion of the world which was subject to their sway. The construction of roads was one of the special objects of attention with all Roman governors: these were carefully measured and marked with milestones: itineraries of the distances along them were preserved and carefully recorded, and they thus obtained a means of geographical measurement, defective indeed according to the requirements of modern science, but still far superior to anything previously possessed.[5] The Itineraries that have been transmitted to us are of much

[2] Plin. *H. N.* vi. 31, § 201. See Note E, p. 202.

[3] Id. xii. 31, § 56.

[4] This may perhaps have arisen from the work of Juba having been composed in Latin. Dr. C. Müller indeed supposes Juba to have written in Greek, and has included his remains among his *Fragmenta Historicorum Græcorum* (vol. iii.), but I am not aware of any proof of this, and considering the circumstances of his life, it would appear much more probable that he should have written in Latin.

[5] See the use made by Strabo (vii. 7, p. 322) of the Egnatian Way.

later date, but it cannot be doubted that similar compilations existed from the earliest periods of the Roman Empire.

§ 7. M. AGRIPPA, the friend and supporter of Augustus, who was a man of first-rate administrative talent, and had, as we have already seen, been the first to introduce a system of high roads into Gaul,[6] was particularly active in promoting this branch of geographical knowledge. He caused a map of the whole world, as then known—the Roman Empire and the adjacent countries—to be set up in the portico of Octavia at Rome, and accompanied it with a detailed commentary, stating the distances from one important point to another, and the length and breadth of the different provinces.[7] These were doubtless derived from the itineraries, wherever such existed; and Pliny speaks in the highest terms of the diligence and care which he bestowed upon this compilation, which he quotes as the highest authority in all cases where he was likely to have had official information.[8] Agrippa, however, did not confine himself to such limits: he not only gave the distances in countries, such as the northern shores of the Euxine, which were not indeed subject to the Roman government, but were still familiar and accessible; but he added those concerning countries of which he had nothing but the vaguest knowledge. Thus he stated the distance from the mouth of the Danube to the Northern Ocean at 1000 Roman miles, and the breadth of the tract between the Scythians and Germans, from the desert of Sarmatia to the river Vistula at 400 miles.[9] He even ventured to estimate the length of the

[6] See above, p. 142.

[7] It appears very probable that the anonymous work repeatedly cited by Strabo under the title of "the chorographer" (*ὁ χωρογράφος*), was either the commentary thus appended by Agrippa to his map, or was directly derived from it.

[8] Thus with regard to Spain, after pointing out the discrepancies between different statements as to the measurement of the provinces, Pliny adds: "Agrippam quidem in tanta viri diligentia, præterque in hoc opere cura, cum orbem terrarum orbi spectandum propositurus esset, errasse quis credat, et cum eo Divum Augustum? Is namque complexam eam porticum ex destinatione et cum commentariis M. Agrippæ a sorore sua inchoatam peregit" (*H. N.* iii. 2, s. 3, § 17).

[9] "Agrippa totum eum tractum ab Istro ad Oceanum bis ad decies centena M. pass. in longitudinem, quadringentis in latitudinem ad flumen Vistulam a desertis Sarmatiæ prodidit" (Plin. *H. N.*

northern coast of Europe along the shores of the Ocean, but this Pliny himself pronounces to be altogether vague and uncertain:[1] and Agrippa himself, in reporting the supposed length and breadth of Britain and Ireland, appears to have done so with an expression of doubt.[2]

The map of Agrippa was evidently painted upon the wall of the portico. That this was not an uncommon practice, we learn from an incidental statement of Varro, that he found his friend Fundanius and others contemplating a map of Italy painted on the wall of the temple of Tellus.[3] Maps also, though of course on a less extensive scale, were painted on boards, and geography was thus made a matter of popular instruction.[4]

The construction of this map and the accompanying commentaries may probably have given rise to the popular notion, which we find in later writers, that Julius Cæsar had ordered a general measurement of the world to be made, which was completed under the reign of Augustus.[5] This notion also was undoubtedly connected with the supposed decree "that all the world should be taxed," and with the real fact that a census of the population of the Empire was ordered and accomplished by Augustus;[6] a measure which must have been

iv. 12, s. 25, § 81). The numbers are differently given in the MSS., and admit of much doubt. This passage also deserves remark as the first in which the name of the Vistula occurs.

[1] Plin. *H. N.* iv. 14, s. 28, § 98.

[2] Id. *ib.* 16, s. 30, § 102. "Agrippa longitudinem DCCC M. pass. esse: latitudinem CCC M. *credit*. Eandem Hiberniæ latitudinem, sed longitudinem CC M. passuum minorem." It is remarkable that the length and breadth of Britain thus given are really very fair approximations: those of Ireland are greatly in excess, but the knowledge of that island possessed by the Romans was always very imperfect.

[3] "Offendi ibi C. Fundanium socerum meum, et C. Agrium equitem Romanum, et P. Agrarium publicanum, spectantes in pariete pictam Italiam." Varro *de Re Rust.* i. 2. The custom of painting such maps upon walls was continued in Italy down to modern times; and they may still be seen on the walls of several palaces.

[4] Thus Propertius:

Conor et e tabula pictos ediscere mundos.
V. 3, v. 37.

[5] See the detailed account of this *pretended* measurement in the Procemium to the Treatise on Cosmography ascribed to Julius Aethicus, appended by Gronovius to his first edition of Pomponius Mela, Lugd. Bat. 1722. The question will be further considered in a future chapter.

[6] Concerning this census, see Marquardt, *Handbuch der Römische Alterthümer*, vol. iii. p. 56; Huschke, *über den Census zur Zeit der Geburt Christi*, p. 13, and Hoeck, *Röm. Gesch.* vol. ii. pp. 392–426.

the means of accumulating a vast mass of geographical as well as statistical information. The care bestowed by the Romans upon the administration of their provinces must have been constantly tending in the same direction, and though the means of anything like a mathematical survey were still almost wholly wanting, the political geography of the Empire was undoubtedly making continual progress.

SECTION 3.—*Military Expeditions.*

§ 1. Whatever positive additions were made to geographical knowledge under the reign of Augustus were the result of military operations and expeditions into the countries bordering on the Roman Empire. One of the most important of these, though in great measure baulked of its intended object, was the expedition of Ælius Gallus into Arabia, a full account of which has been preserved to us by Strabo.[7] Gallus was præfect of Egypt under Augustus, and his enterprise was undertaken at the command of the emperor himself, who was not only stimulated by curiosity, but tempted by the accounts that he had heard of the great wealth of the southern Arabians. He was encouraged also by the promises of the Nabatæan Arabs, who were at this time, as we have already seen, in a state of semi-dependence upon Rome; but their chief Syllæus, upon whose guidance Gallus mainly relied, proved faithless, and the failure of the expedition was in great part attributable to his treachery.

The Roman general began by transporting his whole army, amounting to ten thousand men, including contingents fur-

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[7] Strabo, xvi. 4, §§ 22–24, pp. 780–782. Strabo himself had been on intimate terms with Ælius Gallus, who was præfect of Egypt at the time that he visited the country, and had made the ascent of the Nile in his company (xvii. p. 816). Hence his narrative possesses special claims to our consideration.

Ælius Gallus must not be confounded with Cornelius Gallus, who was the first governor of Egypt appointed by Augustus (Strab. *ib.* p. 819). The date of the expedition in question is assigned by Dion Cassius to the year 24 B.C. (Dion Cass. liii. 29).

nished by the Jews and Nabatæans, by sea from Cleopatris in Egypt (at the head of the Gulf of Suez), down the Red Sea to a port called Leuce Come, which was a place of importance, carrying on a considerable trade with Petra by caravans. Here he was compelled to halt the whole summer and the following winter, in order to recruit his troops, which were suffering severely from an epidemic arising from the hardships and discomforts encountered by them on their passage. This had lasted fifteen days, and he had lost many of his ships upon the rocks and shoals with which this part of the Red Sea abounds. When at length he was able to resume his march, he advanced for many days through a country extremely deficient in water to the territory of Aretas, a kinsman of Obodas the king of the Nabatæans, by whom he was received in a friendly manner; and furnished to some extent with supplies. After traversing this comparatively fertile district for 30 days, he entered upon a tract which was completely desert, and inhabited only by wandering Arabs; this was called Ararene, and occupied him not less than 50 days till he arrived at a city called Negrana, in a fertile and settled region. This he took without difficulty, but after six days' march from thence he was met by the barbarians, who encountered him at the passage of a river, but were defeated with great slaughter, while the Romans lost only two men. After this he took a city named Asca, and another named Athrulla, from whence he proceeded to attack a city called Marsiaba, belonging to a tribe named the Rhammanitæ, who were subject to a king of the name of Ilasarus. But being frustrated in his attack, and suffering from want of water, he determined to retreat, though he was assured by captives that he was within two days' march of the Land of Spices.[8] On his return march he found out how much he had been misled by his faithless guide, and accomplished with little difficulty in sixty days

[8] δυὸ μὲν οὖν ἡμερῶν ὁδὸν ἀπεσχε τῆς ἀρωματοφόρου, καθάπερ τῶν αἰχμαλώτων ἀκούειν ἦν. Strabo, p. 782.

the same distance that had occupied him six months on his advance; returning in the first instance to Negrana, nine days' march; thence in eleven days to a place called the Seven Wells (Hepta Phreata), and thence through a peaceful country by two villages called Chaalla and Malotha to a place named Egra, situated on the sea-coast, and subject to the king of the Nabatæans, where he was able to embark his troops and transport them by sea to Myos Hormus.

§ 2. Detailed as is this account in comparison with many similar notices,[9] it is almost impossible to extract from it any definite geographical information. Even the point from whence Gallus set out on his march, Leuce Come, though described as an important emporium of trade—a position which we find it still occupying near a century later[1]—has been much disputed, but the probabilities certainly preponderate in favour of a place called Howara, situated in exactly 25° of N. latitude, and distant about 200 miles from Kosseir; Egra, the place to which he returned, must apparently have been not far from Leuce Come, as the manner in which Strabo contrasts the time occupied on his advance and his return implies that he must have come back (approximately at least) to the same point from which he set out.[2] Hence we may infer that the farthest point reached, Marsiaba, could not have been much

[9] Thus Pliny, though dwelling upon the importance of the expedition of Gallus as the only one which had penetrated into the interior of Arabia (Romana arma solus in eam terram adhuc intulit Ælius Gallus ex equestri ordine), contents himself with giving us the names of the towns which he destroyed, without any indication of their geographical sequence or position, except that Caripeta (a name not found in Strabo) was the farthest point to which he penetrated (Plin. *H. N.* vi. 28, § 160). Dion Cassius, who also gives a brief history of the campaign (liii. 29), mentions no name except Athloula (Ἄθλουλα), evidently the same with the Athrulla of Strabo, but which he regards as the farthest point attained.

[1] See the Periplus Maris Erythræi, § 19.

[2] Nor could he have found the means of transport across the gulf, till he returned to the friendly country of the Nabatæans. But the position of Egra is as uncertain as that of Leuce Come. Ptolemy indeed places a town of the name in lat. 26°; but little reliance can be placed on his latitudes, and as he does not mention Leuce Come at all, he gives no clue to their relative position. Egra must have been situated *to the south* of Leuce Come, as Gallus could never have returned, without knowing it, to a point *beyond* that from which he started.

more than 60 days' march—about 700 miles at the utmost—distant from Leuce Come. This would bring us to the borders of Yemen, which would accord with the account of their having reached a comparatively fertile country, and with the statement (on which however very little dependence can be placed) of their having approached within a few days' march of the Land of Spices. But Marsiaba itself cannot be determined with any approach to certainty. The name is probably identical with Mariaba, but it is very uncertain whether it is the same with the celebrated city of that name, the capital of the Sabæans, for it is certain that there were several towns of the same name. In the present imperfect state of our knowledge of the interior of Arabia all further investigation seems hopeless; the name of the Rhammanitæ is otherwise wholly unknown, and all such appellations of the subordinate tribes of Arabs must in all ages have been very fluctuating and uncertain.[3]

The accounts brought back by Gallus, as derived from hearsay information, of the great wealth of the Arabians, especially the Sabæans, coincided with the notions previously entertained upon the subject.[4] But it is remarkable that both Strabo and Pliny, while dwelling upon the abundance of spices and precious stones produced in their country, ascribe the great accumulation of wealth in their hands to the circumstance that while they were continually receiving gold and silver in exchange for their own productions, they spent nothing in return upon goods imported from other countries.[5]

§ 3. Immediately connected with the expedition of Ælius Gallus into Arabia and more successful in its results, was that of Petronius into Ethiopia. That country, as has been already mentioned, was at this time governed by a queen named Candace, said to have been a woman of masculine energy of character, who took advantage of the Roman forces in Egypt

[3] See Note F, p. 204.
[4] See Chapter XVIII. p. 58.
[5] Strabo, xvi. 4, § 22; Plin. *H. N.* vi. 28, § 162.

being weakened, as she conceived, by the absence of a large part of them in Arabia, to attack the frontier fortress of Syene, which she took by surprise, as well as Elephantine and Philæ. The Roman governor, C. Petronius, however, quickly recovered possession of these towns and followed up his advantage by penetrating into Ethiopia, where he defeated the army of Candace in a great battle, and took the city of Pselchis. From thence he advanced as far as Premnis, called by Strabo a strong city, which he took, and then proceeded to attack Napata, the capital of Candace. This he also took, and destroyed, carrying off the inhabitants into captivity; but he did not think it expedient to advance farther, and having refortified Premnis and left there a Roman garrison with provisions for two years, he himself returned to Alexandria. Candace soon after assembled another large force, with which she attacked the Roman garrison at Premnis, but Petronius was able to relieve it, and the Ethiopian queen again sued for peace. This time the Roman governor compelled her to send an embassy to Augustus himself, who was at this time wintering at Samos; where her envoys were received with distinction and admitted to favourable terms, even the tribute previously imposed being remitted.[6]

According to Strabo, in advancing from Pselchis to Premnis, Petronius traversed the sandy desert in which the army of Cambyses had perished. This is clearly a mistake, for it was the army sent against the Oasis of Ammon that was lost in the sands—not that which Cambyses himself led into Ethiopia, of which Strabo was evidently thinking. But the fact that Petronius traversed a sandy desert of considerable extent, in which it was thought possible that such a catastrophe could have occurred, seems to indicate that he took the road, generally followed by modern caravans, directly across the desert from Korosko to Abu Hamed, so as to cut off the great bend of the Nile. In this case Premnis was probably situated near

[6] Strabo, xvii. 1, pp. 820–821; Dion Cass. liv. 5.

the angle of that river, in the neighbourhood of Abu Hamed, which is distant about 100 miles from Meraue, the site of Napata. It is probably the same name with the Primis of Pliny[7] and Ptolemy; but the latter author mentions two places of the name, which he calls Primis Magna and Parva.[8] One of these may probably be identified with Ibrim, a place between Pselchis and the Second Cataract, but this can have nothing to do with the Premnis of Strabo, which appears to have been not far from Napata, and it is clear that, in order to reach it Petronius quitted the Nile and traversed a desert tract. Pselchis is clearly identified with Dakkeh, and it is but a little distance above that place that the caravan route strikes off from Korosko. This route would indeed present great difficulties to the passage of an army;[9] but not such as can be pronounced insuperable by troops possessing such hardiness and powers of endurance as the Romans displayed on several other occasions. And the site of Napata being clearly established, in the immediate neighbourhood of Jebel Barkal, the road across the desert must have been at this period well known.[1]

§ 4. Another expedition that attracted considerable attention about the same period was that of Cornelius Balbus against the Garamantes in the interior of Africa. The name of the Garamantes, as we have seen, was already known to Herodotus,[2] and was doubtless familiar to the Greeks of Cyrene, who

[7] Plin. *H. N.* vi. 29, s. 35, § 181. That author enumerates the towns taken by Petronius in the following order: Pselcis, Primis, Aboccis, Pththuris, Cambusis, Atteva, Stadisis (where there was a cataract of the Nile), and finally Napata. He asserts that Petronius had proceeded, in all, 970 Roman miles from Syene, a great exaggeration. The towns mentioned by Pliny would appear, from a comparison with Ptolemy, to have been situated on the west or left bank of the Nile. But Pliny seems to have followed quite a different account of this expedition from Strabo.

[8] Πρίμις ἡ Πρῆμις μικρά, and Πρίμις ἡ Πρῆμις μεγάλη. Ptol. iv. 7, § 19. He places the latter two degrees to the south of the former, and Napata between the two.

[9] See the description of it by Hoskins (*Travels in Ethiopia*, pp. 19–32), and Lepsius (*Briefe aus Aegypten*, pp. 124–136).

[1] It appears that this route was certainly frequented in ancient times, as inscriptions in hieroglyphics are found at the wells. Hoskins, p. 24. Concerning the site of Napata, see above, p. 168.

[2] See Chapter VIII. p. 278.

held extensive commercial relations with the barbarian tribes of the interior. But we hear no more of them until the whole extent of the Carthaginian territory in Africa, including the coast regions adjoining the two Syrtes, had passed under the power of the Romans. It was then that Balbus, being appointed governor of the province of Africa, determined (in B.C. 20) to carry his arms against these independent tribes of the interior, over whom he obtained sufficient successes to entitle him to claim a triumph;[3] but we have very little information concerning the extent or character of his expedition. We learn only from Pliny that he took the towns of Cydamus (Ghadamis) and Garama, which is termed by Pliny "clarissimum oppidum," and was evidently at that period the capital of Fezzan, as Mourzuk is at the present day.[4] There is therefore no doubt that he actually penetrated as far as Fezzan; the name of which, Phazania, became henceforth known to the Roman geographers; but of course no permanent conquest of these outlying regions was attempted.[5] Commercial intercourse was however continued, though with difficulty, the wandering tribes obstructing it by filling up the wells with sand. The route taken by Balbus was apparently from the neighbourhood of the Lesser Syrtis (the Gulf of Cabes), through Ghadamis to Fezzan; it was not till the reign of Vespasian that the direct route from Œa (Tripoli) was discovered and found to be shorter by four days' journey.[6] A long list is given by Pliny of the names of places which figured in the triumph of Balbus, but these were of course mere villages, and none of them can be identified, except the

[3] Plin. *H. N.* v. 5, § 36; Fast. Capit. This triumph attracted especial attention as being the first ever celebrated by one who was not a native Roman citizen, Balbus being a native of Gades in Spain, from which circumstance he derived the surname of Gaditanus (Plin. *l. c.*; Vell. Pat. ii. 51; Strabo, iii. p. 169).

[4] It still retains the name of Germa, or Germ, and is about 70 miles to the N.W. of Mourzuk.

[5] During the insurrection of Tacfarinas, in Numidia, in the reign of Tiberius, the Garamantes appear as an independent people, who for a time supported the rebel chief, and after his death sent envoys to Rome to sue for pardon. They attracted attention as a people rarely seen ("Garamantum legati, raro in urbe visi." Tac. *Ann.* iv. 23).

[6] Plin. *l. c.*

two already mentioned. It is remarkable that Strabo, though he incidentally alludes to the triumph of Balbus, seems to have had no detailed information concerning his expedition, and his knowledge of the Garamantes was very vague and imperfect, even the names of Cydamus and Garama being apparently unknown to him. Nor is any notice of the campaign found in Dion Cassius. But the excitement caused at Rome by the triumph over a people in so remote a situation is sufficiently shown by the well-known introduction of their name in Virgil,[7] among the conquests destined to adorn the reign of Augustus.

SECTION 4.—*Wars in Germany.*

§ 1. It was not till a later period of the reign of Augustus that the Roman arms became the means of adding largely to the knowledge previously possessed of Germany and the north of Europe. We have already seen how imperfect was the geographical information of Cæsar concerning Germany. Though he had obtained correctly the names of several of the chief tribes into which the nation was at that time divided:—the Suevi, Marcomanni, Cherusci and Sigambri—as well as the more neighbouring tribes of the Ubii,[8] the Usipetes and Tencteri, all of which immediately adjoined the Rhine, and he was acquainted in a vague way with the vast extent of the forests which stretched into the interior of the country, he does not mention the names of any of the great rivers which form so important a feature in the geography of northern Germany,

[7] super et Garamantas et Indos
Proferet imperium.
Æn. vi. 795.

If these lines refer, as there is every probability, to the exploits of Balbus, they must have been written in the last year of the poet's life, as the triumph of Balbus took place in the spring of B.C. 19, and Virgil died in the autumn of the same year.

[8] The Ubians, who, in the time of Cæsar, were on the right bank of the Rhine, opposite to the Treviri (iv. 18), had been allowed by Agrippa to cross the river, and establish themselves on its western bank (Strab. iv. p. 194). Their chief town (civitas Ubiorum, Tacit. *Annal.* i. 37) subsequently received a Roman colony, and became the celebrated Colonia Agrippina, which still retains the name of Cologne.

and assume a prominent part in the subsequent campaigns of the Roman generals.

The Roman governors of Gaul were for the most part content with maintaining the frontiers of the province, and defending the line of the Rhine against the incursions of their German neighbours. Drusus, the step-son of Augustus, was the first (after the dictator Cæsar) who crossed the Rhine and carried his arms into the enemy's country (B.C. 12). Setting out from the Island of the Batavi—as the Romans called the island formed at that time by the confluent streams of the Rhine, the Waal and the Meuse,[9]—he crossed the Rhine into the territory of the Usipetes, and from thence into that of the Sigambri, both of which he laid waste to a considerable extent. Returning thence to the Island, where he had assembled a considerable fleet, he sailed by an artificial channel or canal, which had been dug under his directions, into the great lake that at that time occupied a part of what is now the Zuyder Zee, and from thence by an arm of the Rhine into the Ocean.[1] Here he continued his voyage along the coast of the North Sea, as far as the mouth of the Ems (Amisia), effecting the submission of the Frisians, whose name appears for the first time on this occasion. They seem to have received him in a friendly manner, and even rendered him service as allies. It was otherwise with the Chauci, who dwelt on the east bank of the Ems, and whom he consequently attacked, but with heavy loss, owing in part to the imperfect knowledge possessed by the Romans of the tides, a frequent source of disaster to them in these northern seas. The approach of winter compelled him to return, but he had

[9] It is first mentioned under this name by Cæsar (*B. G.* iv. 10).

[1] The course pursued by Drusus on this occasion is best known to us by that pursued by his son Germanicus, who is said to have followed precisely in his father's footsteps (Tacit. *Annal.* ii. 6, 8). The topography of these countries is extremely obscure, on account of the physical changes that have subsequently occurred, and especially the formation of the Zuyder Zee, which did not take place till the 13th century. But it would appear that there were several lakes, the largest of them bearing the name of Flevo, or Flevus, which had a navigable outlet into the North Sea. They were fed probably by the Yssel, and the canal dug by Drusus may have opened the communication between the Rhine and the Yssel. But the whole subject is very difficult.

earned the glory of being the first Roman general who had ever navigated the Northern Ocean.[2]

§ 2. The next year (B.C. 11) he returned to the customary land-warfare; and again crossing the Rhine into the territory of the Usipetes and Tencteri, threw a bridge over the river Lupia (Lippe), by which he advanced into the country of the Sigambri, and thence into that of the Cherusci, which he traversed successfully till he reached the banks of the Visurgis (Weser). Here he was checked by want of provisions and bad weather, and determined to retreat, which he accomplished with some difficulty, leaving however a fortified post with a garrison at a place called Aliso, on the banks of the Lippe, and another in the land of the Chatti, on the right bank of the Rhine.[3]

In his third campaign (B.C. 9) Drusus began his invasion by the land of the Chatti, where his newly erected fortress secured his base of operations, and passing through them to the Suevi, he forced his way, not without continual combats, through their territory also into that of the Cherusci, which he again traversed as far as the Weser. This time he crossed that river also, and pressed onwards as far as the Albis (the Elbe), where he was met (it is said) by a vision, which compelled him to retreat, after erecting a trophy on the banks of the river to mark the extreme term of his advance.[4] The portent was fulfilled by his untimely death, the result of a fall from his horse. But young as he was—he died in his thirtieth year—Drusus had marked his government not only by these daring

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[2] "Oceanum septentrionalem primus Romanorum ducum navigavit." Sueton. *Claud.* i.

The only intelligible account of these campaigns of Drusus is contained in Dion Cassius (liv. 32, 33), but is unfortunately very concise. They were described by Livy in the three last books of his history (which ended with the death of Drusus), and the loss of these is much to be regretted. The few notices found in Florus (iv. 12) and Orosius (vi. 21) are doubtless derived from that source, but they are so rhetorical and unconnected as to be utterly worthless.

[3] Dion Cass. liv. 33.

[4] These Tropæa Drusi are again mentioned by Ptolemy (ii. 11, § 28), but there is no clue to their situation. Strabo (vii. p. 291) speaks of Drusus as carrying on the war, just before his death, between the Rhine and the Saale (Salas), which would point to his having reached the Elbe a long way from its mouth; but this seems at variance with all else that we know of his operations.

expeditions into the heart of the enemy's country, but by measures of a more permanent character—such as the construction of the canal from the Rhine to the Lake Flevus, which always continued to bear the name of the Fossa Drusiana, and was an important means of military communication.[5] He erected also a chain of forts along the line of the Rhine, most of which by degrees grew into flourishing towns,[6] and threw a permanent bridge over that river at Bonn.[7] He may be considered therefore as in great measure the founder of that Roman civilization on the Rhine, which gradually attained to so remarkable a development.

§ 3. The next year (B.C. 8) Tiberius succeeded his brother on the Rhine, and in his turn crossed that river, but was met in a peaceful spirit, and the neighbouring tribes of Germans, including even the fierce Sigambri, submitted to give hostages for their good behaviour. Some years later (A.D. 4) Tiberius resumed the offensive, and after reducing to submission the Cherusci, as well as some less important tribes, crossed the Weser and pressed forward to the banks of the Elbe.

The next year (A.D. 5) was marked by more important operations, Tiberius himself having for the second time advanced at the head of his army to the Elbe, while his fleet sailed round to the mouth of the same river, and ascended it far enough to form a junction with the land forces. But this combined operation was not attended with any really important results;[8] beyond the submission of the Chauci, who

[5] Tacit. *Annal.* ii. 8; Sueton. *Claud.* i.

[6] Florus, iv. 12, § 26.

[7] This appears to be the meaning of Florus (*l. c.*), though the passage, as it stands in the MSS., is certainly corrupt.

[8] This is the distinct statement of Dion Cassius (lv. 28) concerning both these campaigns of Tiberius. *καὶ μέχρι γε τοῦ ποταμοῦ, πρότερον μὲν τοῦ Οὐισούργου, μετὰ δὲ τοῦτο καὶ τοῦ Ἀλβίου, προεχώρησεν· οὐ μέντοι καὶ ἀξιομνημόνευτόν τι τότε γ' ἐπράχθη.* There is obviously great exaggeration in the account of them given by Velleius Paterculus (ii. 104–107), unfortunately the only author from whom we derive any details. His extravagant flattery of Tiberius was combined in this instance with the desire to extol the importance of military exploits in which he had himself taken part.

It is much more strange that Dean Merivale should not only adopt the exaggerated views of Velleius, but should actually speak of this second campaign of Tiberius—which was marked by no decisive action, and produced no lasting result—as "the most

at this period dwelt between the Weser and the Elbe; and a defeat of the Langobardi, a nation whose name here occurs for the first time in history. They appear to have been at this period settled on the left bank of the Elbe, though we soon afterwards find them established beyond that river.[9]

It was undoubtedly the voyage of the Roman fleet that on this occasion attracted the most attention; and it would be interesting to know what it really accomplished. The navigation of the Northern Ocean was at that time regarded as in itself so remarkable an event that even the voyage to the mouth of the Elbe would be considered a great exploit, and would easily become the subject of much exaggeration. If indeed we could trust to Pliny, it would seem that the fleet had advanced northwards as far as the Cimbrian Promontory—the extreme northern point of Jutland[1]—but this seems highly improbable. Such a voyage, more than double the length of that already accomplished, through seas wholly unknown, and without any adequate motive,—all possibility of combination with the land forces being here out of the question—would be wholly at variance with the ordinary practice of Roman commanders. Nor could it have failed to attract general notice; but we find no other mention of it. It is not even alluded to by Velleius Paterculus, who has shown every disposition to magnify and exaggerate all that took place under the command of Tiberius. Augustus himself in the celebrated inscription of Ancyra speaks of his fleet as sailing "towards the east to the extreme parts of the world,"[2] but no definite meaning

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remarkable for the success of its far-sighted arrangements of any recorded in ancient military history." (*History of the Romans under the Empire*, vol. iv. p. 310.)

[9] Augustus, it is said, had prohibited the Roman armies from crossing the Elbe; and Tiberius turned back from that river, which was never again reached by a Roman general.

[1] "Septemtrionalis vero Oceanus majore ex parte navigatus est, auspiciis Divi Augusti, Germaniam classe circumvecta ad Cimbrorum promontorium, et inde immenso mari prospecto, aut fama cognito, ad Scythicam plagam et humore nimio rigentia." (Plin. *H. N.* ii. 67, § 167.)

[2] "Classis Romana ab ostio Rheni ad solis orientis regionem usque ad orbis extrema navigavit, quo neque terra neque mari quisquam Romanorum ante id tempus adit." (*Monum. Ancyranum*, ed. Zumpt. p. 34.)

can be attached to such rhetorical expressions. It would however seem probable that the Romans first brought back from this voyage some vague information concerning the existence of the great promontory or peninsula extending far towards the north, and of an extensive bay, to which they gave the name of Codanus Sinus, beyond it to the east. The Cimbri, who inhabited the modern Holstein as well as the peninsula itself, sent envoys to make their submission,[3] and the Romans may readily have acquired the information from them.

§ 4. While the Roman generals were thus occupied in the north of Germany, great changes had taken place in the more southern portions of that country. The Marcomanni, one of the most powerful and warlike of the German tribes,[4] who appear to have been at one time settled between the Rhine, the Main and the Danube, had been persuaded to migrate from this region, and establish themselves in the midst of the forests of Bohemia, where they considered themselves secure from attack. Here they gradually strengthened themselves, under the command of a native leader named Maroboduus until they were able to subdue or to reduce to submission all the neighbouring tribes, so as to extend their power from the Danube to the Elbe and the Saal. It was probably in connection with these movements that L. Domitius Ahenobarbus (the grandfather of the emperor Nero) had some years before (B.C. 2) been led to take part in favour of the Hermunduri, who had been expelled from their native abodes, and took advantage of the opportunity to penetrate into the heart of Germany. He even crossed the Elbe without opposition, and after concluding a treaty with the natives immediately beyond it, erected an altar in honour of Augustus.[5]

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[3] Ibid. p. 35. It may well be suspected that the Roman fleet really advanced no further than one of the promontories of Sleswick, and would then readily accept the idea that this was the great northern promontory of which they had undoubtedly heard from the Cimbri.

[4] The Marcomanni are mentioned by Cæsar among the tribes that composed the army of Ariovistus (*B. G.* i. 51). At this time they dwelt nearer the Rhine: their migration to Bohemia under the direction of Maroboduus is attested by Strabo (vii. 1, p. 290) and Velleius (ii. 108).

[5] Tacit. *Annal.* iv. 44; Dion Cass. lv. 10 a.

But this expedition, like so many others, had produced no permanent impression. Maroboduus had continued to consolidate his power, and was become the most formidable adversary of the Romans in Germany. Hence Tiberius, after having, as he supposed, put down all opposition in the north, determined to direct his arms against the Marcomanni, and for this purpose concerted a well-arranged plan of attack, according to which he was himself to advance from Carnuntum on the Danube, while Sentius Saturninus, a general of proved ability, was to lead another large army from the banks of the Rhine, through the Hercynian forest, to the frontiers of Bohemia.[6] This plan was however frustrated by the great revolt of the Pannonians, Dalmatians and Illyrians already alluded to, which compelled Tiberius to draw off his legions into those provinces; a treaty was concluded with Maroboduus, and the Marcomanni were for the present left in undisturbed possession of their newly acquired home.

§ 5. Though the accounts which represent the north of Germany, from the Rhine to the Weser, as at this time completely subdued and rapidly approximating to the condition of a Roman province, are probably much exaggerated, it seems certain that Roman habits of life and Roman civilization were really beginning to make considerable progress among the tribes beyond the Rhine, as they had already done on the left side of the river. And had not this gradual operation been abruptly checked, the same process of transformation that took place in Gaul, would probably have extended to Germany also. But an end was suddenly put to all such progress, and the advance of the Roman arms permanently arrested at the Rhine, by the great defeat of Quintilius Varus in A.D. 9.[7] That memorable disaster, involving the total destruction of an army of three legions, and the loss of the important frontier post of Aliso,[8] changed the whole aspect of

[6] Vell. Pat. ii. 109.

[7] Florus, who wrote under Hadrian, remarks, after relating the defeat of Varus: "Hac clade factum ut imperium, quod in littore Oceani non steterat, in ripa Rheni fluminis staret" (Florus, *Epit.* iv. 12).

[8] See Note G, p. 206.

affairs in Germany, and was never retrieved. The actual scene of its occurrence cannot be definitely determined, and from the nature of the engagement, or rather series of engagements, that ended in the annihilation of the Roman force, there is little clue to its identification. It undoubtedly occurred within the limits of the Teutoburger Wald—the Teutoburgensis Saltus of Tacitus—a tract of rugged forest country extending from S.E. to N.W. between the Lippe and the Weser, from the neighbourhood of Paderborn to that of Osnabrück. But the precise locality that was marked by the death of Varus and his surviving officers cannot be identified.[9] No tradition attaches to any particular spot, nor have the researches of modern antiquaries succeeded in discovering any remains that might enable us to trace the movements of the Roman army, or determine the scene of the final disaster. A few years later, while the traces were still recent, the locality was visited by Germanicus, who paid funeral honours to the fallen Romans, but the tumulus erected on this occasion to mark the site was shortly afterwards purposely destroyed by the Germans.[1]

§ 6. The subsequent campaigns of the Romans in this quarter had comparatively little geographical interest. Tiberius, in A.D. 11, again crossed the Rhine and made a show of invading Germany, but his movements were slow and cautious, and led to no practical result. After his accession to the throne the command of the army on the Rhine devolved on the young Germanicus, who earned a great military reputation in three successive campaigns (A.D. 14–16), but did not actually penetrate into Germany so far as his father Drusus and Tiberius had already done. Though he boasted, on a trophy that he erected on his most distant battle field, that he had subdued all the nations between the Rhine and the Elbe,[2] he certainly

[9] See Note H, p. 207.

[1] Tac. *Ann.* ii. 7.

[2] "Cæsar congeriem armorum struxit, superbo cum titulo: debellatis inter Rhenum Albimque nationibus exercitum Tiberii Cæsaris ea monimenta Marti et Jovi et Augusto sacravisse." Tacit. *Annal.* ii. 22.

In like manner he celebrated his triumph in the following year "de Cheruscis Chattisque et Angrivariis, quæque aliæ nationes usque ad Albim colunt" (Id. *ibid.* 41). Of these the Angrivarii, whose name appears for

never approached the latter river in person, and had in fact only just crossed the Weser. His fleet, which had sailed round as far as the mouth of the Ems, sustained great loss from a storm on its homeward voyage, and Germanicus himself with difficulty escaped. The Romans however at this period seem to have still maintained some garrisons in these maritime districts, and the two tribes of the Frisians and the Chauci continued faithful to the Roman alliance.

Meanwhile the southern nations of Germany had been divided by internal discord, and Maroboduus, who had at one time assumed so threatening a position, was ultimately driven from his throne, and having taken refuge in the Roman dominions, lived and died an exile at Ravenna.[3] The Roman arms made no progress in this quarter, but they appear to have already begun to occupy, or at least to extend their jurisdiction over the south-western corner of Germany, lying between the Rhine, the Neckar and the Danube; a district subsequently known as the Agri Decumates, and which was for a considerable period incorporated with the Roman Empire.

SECTION 5.—*Diodorus.*

§ 1. Among the Greek writers contemporary with the reign of Augustus there is one who deserves a brief notice in this place, though his work was not directly of a geographical character. This is the well-known historian Diodorus, commonly known as DIODORUS SICULUS, from his having been a native of Agyrium in Sicily. His voluminous historical work, to which he gave the name of Bibliotheca Historica, as if it formed a complete historical library in itself, extended to forty books (fifteen of which have been preserved to us) and was

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the first time in this campaign, dwelt on both banks of the Weser, between the Cherusci and the Chauci. They are again mentioned by Tacitus in the Germania (c. 33).

[3] Tac. *Ann.* ii. 62, 63.

MAP TO ILLUSTRATE THE WARS OF THE ROMANS IN GERMANY AND THE GERMANIA OF TACITUS.

intended to comprise a general history of the world, including that of the barbarians and Romans as well as the Greeks, from the commencement of historical tradition to the beginning of the Gaulish wars of Julius Cæsar.[4] Though he himself tells us that this last date (B.C. 59) was the appointed terminus of his undertaking, it is certain from his own expressions that he survived the death of Cæsar, and that his work was not published till after that event.[5] On the other hand the absence of all allusion, in his elaborate description of Egypt, to that country having passed under the government of Rome, renders it probable that it was published before B.C. 30, when Egypt was annexed to the Roman Empire.

Of the historical merits or qualifications of Diodorus it does not fall within the province of the present work to speak; it is enough to say that the uncritical character of his work, which disfigures it throughout, is not less apparent in the few notices that have a direct bearing upon geography, than in the more strictly historical portions of his narrative. Though he himself tells us that he spent more than thirty years in the preparation of his great work, and that he undertook many laborious and dangerous journeys in order to visit those parts of Asia and Europe which were of the chief historical interest, and make himself personally acquainted with the localities,[6] it is certain that very little trace is to be found of any advantage resulting from this cause. Much as we owe to the laborious compilation of Diodorus for having preserved to us an outline of many periods of ancient history, which would otherwise have been almost totally lost, it is impossible not to feel that it is a mere *farrago* of materials of very unequal value, jumbled together without any attempt at critical judgement or selection.

§ 2. Nowhere are these defects more apparent than in the

[4] Diodor. i. 4.

[5] This is evident from the title of Divus (ὁ διὰ τὰς πράξεις προσαγορευθεὶς θεός), which he repeatedly associates with his name, i. 4, v. 21.

[6] i. 4.

first five books, which contain brief notices of the early history of the Egyptians, Assyrians, Chaldæans, &c., together with accounts of the Ethiopians, Arabians, Indians, Scythians and other nations, which would have been of considerable value and interest to us had they been compiled with somewhat more judgement and critical sagacity.. As it is they contribute very little to our positive knowledge of the nations to which they relate, and almost nothing to our geographical acquaintance with the countries they inhabited. Among the few portions of this part of the work that are really trustworthy and valuable is the long and detailed account of the Ethiopian nations adjoining the Red Sea, which is taken—as has been already pointed out, and as we are indeed informed by Diodorus himself—directly from Agatharchides and Artemidorus,[7] and which would have been an important accession to our geographical knowledge had we not happened to possess the same information from another source.[8]

§ 3. The fifth book contains notices of the various islands in the Mediterranean, some of which are not without interest, though his account of Sicily is singularly poor and meagre, considering that he was a native of the island.[9] To these are appended, as it were in passing, a brief notice of an island in the Atlantic Sea, beyond the Pillars of Hercules, several days' sail from the coast of Africa, which would appear to be based upon the accounts of the recently discovered island already noticed, though greatly exaggerated, representing it as of large size and containing navigable rivers;[1] and a tolerably full account of the British Islands. This last is evidently derived in great part from the information obtained by Cæsar, to whose expedition he expressly refers, as the first time that Britain had ever been visited by a foreign invader. In one respect indeed

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[7] Diodor. iii. 11.

[8] See Chapter XVIII. §§ 2, 3.

[9] On the other hand his account of the Balearic, or Gymnesian Islands (as they were termed by the Greeks), is one of the best that is preserved to us from antiquity (v. 18).

[1] v. 19. Concerning this island, see Chapter XVIII. p. 81.

his geographical information was in advance of that furnished us by Cæsar himself, or any later geographer till the time of Ptolemy—that he gives us the names of the three promontories forming the angles of the triangular island, which he names Cantium, Belerium (evidently the Bolerium of Ptolemy, the Land's End) and Horcas, the most northern headland, to which Ptolemy also gives the name of Orcas, evidently in connection with the adjacent group of the Orcades.[2]

§ 4. To this he adds the most circumstantial account found in any ancient writer of the production of tin in Britain.[3] This, as he correctly tells us,[4] was found only in the part of the island adjoining the promontory of Belerium, the inhabitants of which were the most hospitable and civilized of all the Britons, on account of the extensive commerce resulting from this cause. The tin extracted from these mines was fused into ingots of a peculiar shape, and carried to a small island adjoining Britain of the name of Ictis. Here it was purchased by traders, who carried it to Gaul, where it was transported over land on horses in about thirty days to the mouths of the Rhone. The island of Ictis is described as surrounded by the sea at high water, but connected with the main land by a tract of sand, which was left bare at low water, so as to render it a peninsula, to which the tin was carried in waggons. This characteristic account leaves no reasonable doubt that the locality indicated was St. Michael's Mount, to which the description precisely answers, and which contains a small port such as would have been well suited to ancient traders.[5] From whence

[2] Diod. v. 21.

[3] It is remarkable that while he here correctly describes the tin-producing mines as situated on the main island of Britain, he has no mention in this place of the name of the Cassiterides or Tin Islands, which he in common with almost all other writers considered as connected with Spain and describes them elsewhere accordingly (v. 38), where he however repeats the statement that a great quantity of tin was transported *from Britain* to the opposite shores of Gaul, and from thence overland to Massilia and Narbo.

[4] v. 2.

[5] The resemblance of the *name* to that of Vectis—the Isle of Wight—has led some modern writers to suppose that to be the island meant; but in such cases the resemblance of physical characteristics outweighs enormously that of mere name. Nor could the Isle of Wight have been by possibility at any time the centre of the tin-trade, which, as Diodorus himself points out, was confined to the district near the Land's End, to which he gives the name of Belerium.

Diodorus received this information we have no knowledge. There can be little doubt that his island of Ictis is the same with the Mictis of Timæus, though that writer, as we have seen, had only a very confused idea of its position: but his detailed account of the mode in which the tin was carried across Gaul to the mouths of the Rhone (i.e. to Massilia) seems to point to some much more recent source of information. It may not improbably have been derived from that obtained by P. Crassus, the lieutenant of Cæsar, which is recorded to us by Strabo.[6]

It is eminently characteristic of the uncritical character of mind of Diodorus, that in the same book with this account of Britain, he has given at considerable length a description of the island of Panchaïa in the Erythræan Sea,[7] taken from Euhemerus, whose work is justly treated by Strabo and other authors as a pure and absolute fiction.[8]

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[6] Strabo, iii. 5, § 11, p. 176.

[7] Diodor. v. 42–46.

[8] See Strabo, i. p. 47, ii. p. 102, &c.

NOTE A, p. 144.

ALPINE TRIBES.

THE ethnology of these Alpine tribes is still very obscure. But it would appear certain that none of them were Germans. The well-known statement of Livy that the Rhæti and other Alpine nations were of kindred origin with the Etruscans (Liv. v. 33: "Alpinis quoque ea gentibus *haud dubie* origo est, maxime Rætis: quos loca ipsa efferarunt, ne quid ex antiquo præter sonum linguæ, nec eum incorruptum, retinerent") is one of those assertions of the value of which it is almost impossible to judge: but supported as it is by the statement of their retaining a similarity of language—a fact of which the Romans were well able to judge—we should be hardly justified in rejecting it altogether. But this Etruscan element was probably confined to some of the more southerly tribes, occupying the slopes of the Alps adjoining Italy, into which they had been driven when expelled by the Gauls from the valley of the Po. The preponderance of argument appears to be in favour of the Rhætians (and with them the Vindelicians, who are always described as being a kindred tribe) being of Celtic or Gaulish extraction, (see Zeuss, *Die Deutschen*, pp. 228–238; and Diefenbach, *Celtica*, vol. i. pp. 133–137). The same thing may be asserted more confidently of the Tauriscans, who formed the bulk of the population of Noricum, and of the Scordiscans, a decidedly Celtic people (Strabo, vii. pp. 313, 315), who were at this period still settled in Pannonia. But the Iapodes, a tribe who inhabited the Julian Alps between the Save and the Adriatic, are called by Strabo a mixed people, partly Gaulish and partly Illyrian (Ἰάποδες, ἤδη τοῦτο ἐπίμικτον Ἰλλυριοῖς καὶ Κελτοῖς ἔθνος. Strabo, iv. p. 207): and there certainly seems reason to believe that the bulk of the Pannonians were an Illyrian race.

Dion Cassius, who had himself been governor of the province of Dalmatia and upper Pannonia, has given us a graphic sketch of the Pannonians, whom he describes as κακοβιώτατοι ἀνθρώπων ὄντες: inhabiting a cold and barren country, producing neither oil nor wine, and compelled to make their drink as well as food from

barley and millet. But this very poverty rendered them also the bravest and most pugnacious of mankind. (Dion Cass. xlix. 36.) It is evident that this description could apply only to the tribes inhabiting the mountain districts on the borders of Dalmatia and Illyria, corresponding to the modern Bosnia and Herzegovina; not to those that occupied the fertile plains on the banks of the Save and the Drave.

Dion Cassius (*l. c.*) correctly points out the error committed by many Greek writers in confounding the Pannonians with the Pæonians, a people inhabiting the mountains in the north of Macedonia, with whom they had nothing in common: but he makes no statement with regard to the ethnic affinities of the Pannonians. The name first appears in history when the people came in contact with the Roman arms.

NOTE B, p. 157.

GALATIA.

Galatia, in this sense, included the cities of Iconium, Antioch of Pisidia, Derbe and Lystra, so well known from the part they bear in the travels of St. Paul, and M. Renan has well pointed out that it was to the inhabitants of these cities, and not to the Galatians, properly so called, that the Epistle to the Galatians was in all probability addressed. (Renan, *St. Paul*, pp. 48–50.)

The original people of the name, who continued to inhabit the province where they had been settled ever since the time of Attalus I., king of Pergamus, between the Sangarius and the Halys, retained their nationality with striking pertinacity. They continued to be divided into three tribes, the Tectosages, Trocmi, and Tolistoboii; all of them distinctly Gaulish names, and the first still borne in the time of Strabo by a tribe in the south of Gaul. (Strabo, xii. p. 567.) They retained also their native language, which they continued to speak with very little change, as late as the time of Hieronymus, in the fourth century of the Christian era. (Hieronym. *Comment. in Epist. ad Galat.* ii. 3, p. 430). Their chief city at this time was Pessinus, but Ancyra became the capital of the Roman province, and soon rose to the important position which it has ever since retained.

NOTE C, p. 166.

TIGERS.

It was doubtless one of these tigers that Augustus afterwards exhibited in a cage on the occasion of the dedication of the theatre of Marcellus (Plin. *H. N.* viii. 17, § 65). This was the first tiger *seen at Rome*, as we are expressly told by Pliny. But Dion Cassius certainly goes too far in supposing that those presented to Augustus were the first ever seen by the Greeks. Tigers must have been seen by the companions of Alexander in India: besides which they were found in Hyrcania and the adjoining provinces: every one is familiar with the expression of "Hyrcanæ tigres" in Virgil (*Æn.* iv. 367). Pliny also says: "Tigrin Hyrcani et Indi ferunt" (*l. c.*); and Mela has a full notice of them in reference to Hyrcania (iii. 5, § 43). They are still found not uncommonly on the west side of the Caspian in the dense forests and jungles near the mouth of the Araxes.

NOTE D, p. 175.

JUBA'S ACCOUNT OF THE NILE.

Plin. v. 9, s. 10, §§ 51–53. It is hardly worth while to discuss in detail a statement which is so obviously a mere string of unfounded inferences and assumptions. But it deserves a passing notice as the first suggestion of that supposed connection between the Niger and the Nile, which continued so long to be a favourite theory even with modern geographers. If we can rely upon the mention of the river Niger being found in Juba, he was certainly the earliest author that was acquainted with that celebrated name, and the fuller notice of it found elsewhere in Pliny (v. 8, § 44) may probably be derived from the same source. The statement that its banks were clothed with forests is also interesting, as the first indication in any ancient author of the existence of the fertile regions of Soudan, beyond the broad desert tract of the Sahara.

The supposition that the two lakes mentioned in the first part of the account were fed by the same river, and had a subterranean communication with one another and with the Niger, is of course a mere fancy; but the statement that they contained crocodiles and

large fish, such as siluri, &c., is remarkable; as this was a fact likely to be within his own knowledge, and he even adds that a crocodile sent from thence was preserved in the temple of Isis at Cæsarea. (Iol.) (Crocodilus quoque inde ob argumentum hoc Cæsareæ in Iseo dicatus ab eo spectatur hodie. § 51.) The lakes now found at the foot of the Atlas are all shallow, and nearly dry in the summer; but they may well have been more extensive in ancient times. The assertion also made (§ 51) that the rise and fall of the Nile was coincident with the fall of rain and snow in Mauretania was certainly erroneous: the rains of tropical Africa, upon which the inundation of the Nile really depends, having no connection with those of Mauretania.

NOTE E, p. 176.

THE FORTUNATE ISLANDS.

The account of the group of islands in question given by Juba and reported by Pliny (vi. 32, §§ 203, 204) deserves a more careful examination, as the only one with any pretension to accuracy transmitted to us from antiquity. That of Ptolemy, as we shall hereafter see, is a mere confused jumble of different reports. Pliny begins with telling us, after giving the different statements concerning the islands of the Gorgons, Hesperides, &c., and showing their utter uncertainty, that there was no more certain information concerning the islands of Mauretania. It was only ascertained (constat) that there were a few, opposite to the land of the Autololes, which were *discovered* by Juba (a Juba repertas), and in which he had established a factory for dyeing the Gætulian purple (§ 201). There can be no doubt that these are the same islands to which he gives the name of Purpurariæ, a few lines further on, where he tells us, as the result of the researches of Juba concerning the Fortunate Islands, that these were situated towards the south and west, and were distant 625 miles from the Purpurariæ, "sic ut CCL supra occasum navigetur, dein per CCCLXXV M. P. ortus petatur." It is very difficult to know what sense Pliny attached to these words: the most probable explanation is that suggested by Gossellin, that his authority was really describing the double voyage, to and fro, and that he has erroneously combined the two into one distance. In this case, if we suppose the Purpurariæ Insulæ to be the

two easternmost of the Canary Islands, Lanzarote and Fuerteventura—the conclusion adopted by D'Anville and Gossellin, as well as more recently by Mr. Major,—the distance of 250 miles is not far from the truth, as the *direct* distance to the outermost of the group, while the larger number may be accounted for by supposing it to be the aggregate of the separate distances from one island to another, a frequent source of error in similar computations. On this supposition the description of the islands would follow the course of the return voyage, beginning with one of the outermost, and this is in accordance with the fact that Ombrios, which he names first, is described as having a lake or pool (stagnum) in the mountains, a statement which probably refers to the celebrated crater or caldera in the island of Palma; one of the two most westerly of the group. The island of Nivaria, perpetually shrouded in snow or mist, is clearly Teneriffe, with its mighty snow-clad peak: while Canaria, the most fertile of the group, is equally certainly that now known as Grand Canary. There remain Junonia and Capraria, of which the former might readily be identified with Gomera, and the latter with Ferro, the smallest of the whole group. But a difficulty arises from the circumstance that a second and smaller island of the same name is said to exist in the neighbourhood of Junonia. No such island now exists, and it is almost certain that there is some misconception on this point. With this exception the identifications are satisfactory enough.

The chief difficulty arises with regard to the Purpurariæ Insulæ, which are certainly not mentioned by Pliny in a manner that would lead us to suppose they were so nearly connected with the Fortunate Islands as are Lanzarote and Fuerteventura with the rest of the Canaries. His expressions would rather seem to imply that they were small islands on the coast of Mauretania. But no such islands are to be found, and the circumstance that these two, in common with the rest of the Canaries, abound in *orchil*, a kind of lichen yielding a beautiful purple dye, raises a strong presumption that this was the "Purpura Gætulica" mentioned by Pliny, and from which the islands derived their name.

Humboldt supposes the Purpurariæ to have been the group of Madeira and Porto Santo, but these islands produce no orchil: besides which they lie so far out to sea that they can hardly be supposed to have been those described by Pliny as islands of Mauretania, opposite to the Autololes. Moreover, unless we

suppose Lanzarote and Fuerteventura to be those designated as the Purpurariæ, these two important islands remain unaccounted for, and it is impossible to explain why Juba, in describing the Fortunate Islands, proceeding from west to east, should have stopped with Canaria and not noticed the two lying between it and the mainland. The actual distance of Fuerteventura from the nearest point of the coast of Africa does not exceed 50 G. miles.

If we compare the list cited from Statius Sebosus with that of Juba, we find the names of Junonia and Capraria the same, while his Pluvialia is obviously identical with the Ombrios of Juba; but his distances and positions are altogether unintelligible, and it is evident that his information was mere hearsay. That of Juba, on the contrary, was clearly the result of careful inquiry, and is in general perfectly correct. But there is no foundation for the statement that he sent out an expedition for the express purpose of exploring the Fortunate Islands. (Major's *Prince Henry*, p. 136.) Pliny's words ("Juba de Fortunatis ita inquisivit") cannot be held as affirming anything of the kind.

NOTE F, p. 182.

EXPEDITION OF ÆLIUS GALLUS INTO ARABIA.

The geography of this expedition has been investigated with much diligence by Mr. Forster in his 'Geography of Arabia,' as well as by Dr. Vincent, Gossellin, and several earlier writers; and more recently by Mr. Williams in Dr. Smith's 'Dictionary of Ancient Geography' (art. MARSYABÆ); but the wide divergence between their views and results sufficiently shows the uncertainty of the subject. No conclusion can fairly be drawn from the march in advance, as we are distinctly told by Strabo that the Roman army was purposely misled, and wandered about without occasion, so as to waste much time. Whether it was actually led too far into the interior, to Nejd and other inland districts, and then out again to the borders of Yemen, or only strayed within more moderate limits, we have no means of judging; though the former supposition is the most probable, if we can place any reliance on the statement of the time occupied on the march. But none of the names of places men-

tioned by Strabo during the advance can be identified. These names themselves vary much in our MSS., while those given by Pliny are equally uncertain. That author tells us only: "Gallus oppida diruit non nominata, auctoribus qui ante scripserant, Negranam, Nestum, Nescam, Masugum, Caminacum, Labeciam, et supra dictam Mariabam circuitu VI mil. passuum; item Caripetam quo longissime processit" (vi. 28, § 160. The readings adopted by Sillig in his latest edition are here followed, but the names vary much in the earlier editions and MSS.). Here we find the name of Negrana in both authors, and the Nesca of Pliny may reasonably be identified with the Esca or Asca of Strabo, but his other four names mentioned in the same sequence, as well as Caripeta, which he represents as the terminus of the expedition, are wholly unknown. His Mariaba is doubtless the same place as the Marsiaba or Marsyabæ of Strabo, though he erroneously represents it as having been taken by Gallus; but he appears to have confounded it with another Mariaba, which was situated in the land of the Calingii, and indeed it is clear that there were several places of the name in Arabia. Pliny himself mentions three towns of the name, which he certainly supposed, whether correctly or not, to be situated in different parts of Arabia. The most important and best known of these was undoubtedly the capital of Sabæa, which still retains the name of Mareb: and this has been generally supposed to have been the place besieged by Gallus. The land of spices (ἡ ἀρωματόφορος) could hardly have been any other than Hadramaut, and this they are supposed to have approached within two days' journey; but very little reliance can be placed on this statement, which is said to have been derived from captives. The distance also from Leuce Come (supposing that place to have been at Howara) exceeds what any army could reasonably be supposed to have marched within 60 days.

The position of Leuce Come at Howara seems to me well established, notwithstanding the counter arguments of Mr. Williams: and the opinion of D'Anville, who first pointed out that the modern Arabic name has the same signification as the ancient one, has been adopted and confirmed by Ritter and C. Müller. (Ritter, *Geographie von Asien*, xii. p. 123, &c.; C. Müller in his edition of the *Geographi Græci Minores*, tom. i. p. 272, note; D'Anville, *Mémoires sur l'Egypte*, p. 243.) The objection that it is too far south to have been included in the territory of the Nabatæans

has little weight, as the limits of these Arabian tribes are little known, and were doubtless subject to great fluctuations. The author of the 'Periplus of the Erythræan Sea,' in whose time Leuce Come was still a place of considerable trade, places it at two or three days' voyage across the Gulf (*i. e.* the Red Sea) from Myos Hormus (*Peripl.* § 19); an estimate considerably less than the truth (the real distance being about 250 miles); but this part of his treatise is given in a very vague and general manner, and evidently does not aim at great accuracy.

The subject has recently been investigated afresh by M. Sprenger, in a paper inserted in the *Journal of the Asiatic Society* (N. S. vol. vi. 1873, pp. 121–141), who has thrown considerable light on several points, though some of his identifications rest upon dubious grounds. The most important is that of Negrana, which may safely be considered as represented by the modern Nejran, situated in lat. 17° 20′, and about 150 miles N.N.W. of Mareb, which would suit well with the nine days' march from the one city to the other on the retreat. He therefore identifies the Marsyaba of Strabo with the well-known city of Mariaba in Sabæa, still called Mareb. And he finds the name of the Rhammanitæ represented by a town called Rhadman in the same neighbourhood, and the Caripeta of Pliny in a place still called Kharibeh. He supposes Gallus on his advance to have been led through the district of Nejd and Hajr (of which Riadd is the capital), and from thence to the borders of Yemen, where Negrana would be the first place they met with. All the other towns mentioned by Strabo and Pliny were probably within the same fertile district of Yemen.

In these general conclusions we must be content to acquiesce, as the account given by Strabo is not sufficiently detailed to admit of more accurate determination, and the "towns" in the interior of Arabia have seldom left any vestige of their existence.

NOTE G, p. 192.

ALISO.

The position of Aliso, which bears so important a part in these campaigns, unfortunately cannot be identified with any certainty. There can be no reasonable doubt that it was the fortress erected

by Drusus in B.C. 11, on the banks of the Lippe, in order to secure possession of the territory between the Rhine and the Weser (Dion Cass. liv. 33). This was placed, according to Dion Cassius, at the confluence of the Lippe with a small stream which he names Ἔλισων, but this streamlet cannot be identified; and accordingly Aliso has been placed at almost every point along the course of the Lippe, from its sources to its confluence with the Rhine. The predominance of opinion among German writers appears to be in favour of a place called Elsen, a few miles west of Paderborn, at the juncture of the Lippe with the Alme, and this view has been strenuously maintained by the most recent inquirers into the subject, Von Weitersheim and Abendroth, as well as by M. Schierenberg (*Die Römer im Cheruskerlande*, p. 27). Dean Merivale, however, considers this as too far from the Rhine, and is disposed to adopt Hamm, about 35 miles further west, as a more plausible locality; the same view is sanctioned by Niebuhr, while Ukert inclines in favour of Haltern, still considerably further towards the west, and only about 25 miles from the Rhine. The point does not seem susceptible of any positive decision; the trifling Roman remains that have been found in different localities being inconclusive, as there were certainly other Roman forts and military stations in this part of the country. The subject is fully discussed and the older authorities reviewed by Ukert (*Geogr.* vol. iii. pt. i. p. 439). See also Merivale's *History of the Romans*, vol. iv. pp. 232, 360: and the article ALISO in Smith's *Geogr. Dict.* vol. i. p. 103.

The river Else, the name of which might readily suggest its identity with the Elison of Dion Cassius, is out of the question, as it flows into the Werra instead of the Lippe, and is on the further side of the Teutoburger Wald.

NOTE H, p. 193.

DEFEAT OF VARUS.

This is the conclusion in which the most recent German historians find themselves compelled to acquiesce. Great ingenuity and much labour have been expended upon the subject by German antiquaries, and the result of their researches is fully summed up by Ukert (*Geogr.* vol. iv. pp. 123–136). But that judicious and

cautious writer, after giving the substance of all that we learn from ancient authors concerning this memorable event, points out how imperfect is the information that we derive from them concerning any of its details. We do not know the situation of the camp of Varus, from whence he set out, nor the direction of his march in the first instance: and though it seems certain that when he found himself attacked on all sides, he directed his march towards Aliso, the position of that fortress, as already stated, is itself uncertain. The nature of the country also is such as, while agreeing completely with the general descriptions of the ancient authorities, can hardly admit of any more accurate determination. Forests, marshes, and a succession of ridges of hills of no great elevation, are found throughout the tract in question, and afford no clue to the distinction between one locality and another.

The only narrative that gives us any details is that of Dion Cassius (lvi. 18–22): but some interesting facts are furnished by Tacitus in his account of the visit of Germanicus to the same localities a few years afterwards (*Annal.* i. 61, 62). The rhetorical flourishes of Velleius (ii. 117–119) and Florus (iv. 12) convey no definite information. The most recent investigation of the subject by E. von Wietersheim (*Geschichte der Völkerwanderung*, vol. i. pp. 425–433) has been supplemented by Major Abendroth in his *Terrainstudien zu dem Rückzuge des Varus und den Feldzügen des Germanicus* (8vo. Leipzig, 1862), who has examined the ground from a military point of view. He fixes the position of Aliso at Elsen near Paderborn, and places the scene of the three days' fighting and the destruction of the army of Varus *north* of the ridge of the Teutoburger Wald, in the neighbourhood of Lemgo and Detmold, and on the line of retreat from thence to Elam. But his arguments, though plausible, are hardly conclusive. Another late writer on the subject (Schierenberg, *Die Römer im Cheruskerlande*, Frankfort, 1862) fixes the site of the battles between Feldrom and Driburg, a few miles further south, but on the southern slope of the mountain ridges near the sources of the Lippe. After reading them both, one still feels disposed to acquiesce in the *dictum* of Niebuhr, more than fifty years ago: "Die Gegend wo Arminius den Varus schlug ist nimmermehr zu ergründen." (*Vorträge über Römische Geschichte*, vol. iii. p. 156.)

CHAPTER XXI.

STRABO.

SECTION 1.—*General Views.*

§ 1. WE are now come to the period when we are able for the first time to obtain a complete and satisfactory view of the state of geographical science. For this advantage we are indebted to the comprehensive work of STRABO, which, as Humboldt has justly remarked, "surpasses all the geographical writings of antiquity, both in grandeur of plan, and in the abundance and variety of its materials."[1] Its author flourished during the whole of the reign of Augustus and the early part of that of Tiberius, and his great geographical work could not have been completed earlier than the year A.D. 19: so that it may be taken as representing the state of geographical science, as well as the political organization of the Empire, as it existed after the death of Augustus and the completion of his task in the construction of that vast system of government.

Of the author's life and personal history we knew little; but as that little is derived entirely from incidental notices and statements in his own work, it may be relied on as perfectly authentic. Some modern writers however have endeavoured to derive from these notices a number of inferences and conclusions, which are, to say the least, very dubious, and it is safer to disregard them altogether. He was a native of the city of Amasia in Pontus, which, though situated in the interior of the country, and at one time the residence of a dynasty of barbarian kings, had imbibed a strong tincture of

[1] Humboldt's *Cosmos*, vol. ii. p. 187. Engl. transl.

Greek civilization, and had probably a large Greek population.[2] It is certain at all events that Strabo received a good Greek education, which fitted him for subsequently pursuing his studies under rhetoricians and philosophers of the highest reputation. Of his father's family we know nothing, but that of his mother occupied a distinguished position, and different members of it had held important military and political posts under Mithridates Euergetes, and his more celebrated son, Mithridates Eupator. During two generations they had settled at Cnossus in Crete, and from this circumstance Strabo derived connections with Crete, to which he adverts in his description of that island.[3]

The year of his birth cannot be determined with certainty: but he tells us himself that he was quite young, when he was sent by his father to Nysa in Caria, to prosecute his studies under Aristodemus, a native of that place, who at this time enjoyed a considerable reputation as a grammarian.[4] He subsequently studied philosophy under the Aristotelian Xenarchus, who was a native of Seleucia in Cilicia, but it is probable that this took place either at Alexandria or Rome, in which cities Xenarchus resided a great part of his life.[5] Beyond the journey necessary on this occasion we know nothing of the circumstances that led to his travels, but these appear to have been commenced while he was still young, and we learn from himself that he visited Corinth at the time that Augustus was there on his return from Egypt to celebrate his triumph at Rome, a circumstance which fixes his visit to Greece in B.C. 29. From thence he proceeded to Rome, where he certainly spent a considerable time, and probably remained several years. But the farthest part of Italy to which his travels extended was Etruria; where he visited the headland of Populonium—from whence travellers were told that they could see Corsica and

[2] Amasia, which still retains its name, and the curious tombs of the kings there, are fully described by Mr. Hamilton in his *Researches in Asia Minor and Pontus*, vol. i. pp. 366–372.

[3] Strabo, x. 4, § 10, p. 477.

[4] Id. xiv. i. § 48, p. 650.

[5] Id. xiv. 5, § 4, p. 670.

Sardinia[6]—and apparently also the Port of Luna, or Gulf of Spezia. It was probably on his return from Rome that he repaired to Alexandria, where he resided a considerable time, and took the opportunity to accompany the Roman governor Ælius Gallus on his voyage up the Nile to Syene and Philæ.[7] This expedition took place in B.C. 24.

§ 2. Though Strabo boasts of the extent of his travels as qualifying him for the task he had undertaken, and asserts that they comprised a wider range than any previous geographer had done, "for that those who had penetrated farther towards the West, had not gone so far to the East, and those on the contrary who had seen more of the East had seen less of the West:" it must be admitted that they were not really in any way remarkable, nor is there any evidence that they were undertaken in a scientific spirit, or carried out in a systematic manner. Though he had visited several distant points—according to the ideas of his age—and could assert with truth that he had travelled from the frontiers of Armenia on the east to the shores of the Tyrrhenian Sea on the west, and from the Euxine Sea to the borders of Ethiopia,[8] he was far from having seen, even in the most superficial way, the different countries that lay within these limits. His personal acquaintance with Italy was by no means extensive: and even of Greece itself he saw very little: apparently only Corinth (where he ascended the Acro-Corinthus)—Athens, Megara and perhaps Argos. He speaks of having seen Cyrene *from the sea*[9] (probably on his voyage from Italy to Egypt), but he did not land there, or take the trouble to visit so celebrated a city:

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[6] Id. v. 2, § 6, p. 223. It is a popular error, though one repeated by many writers, in modern as well as ancient times, that *Sardinia*, as well as Corsica, is visible from this point of the Tyrrhenian coast. Strabo himself remarks that it is "a long way off and seen with difficulty" (*πόρρωθεν μὲν καὶ μόλις*). But it is in fact wholly concealed by the intervening lofty mass of Elba, even if the distance, of above 120 miles, were not too great (Dennis's *Etruria*, vol. ii. p. 239). Eratosthenes, though he had certainly never been there, denied that *either* Corsica or Sardinia could be seen, for which he is justly censured by Strabo, as the former is plainly visible on a fine day.

[7] Strabo, ii. 5, § 12, p. 110; xvii. 1, § 50, p. 818.

[8] Id. ii. 5, § 11, p. 117.

[9] Id. xvii. 3, § 20, p. 837.

and he describes Tyre in terms that prove he had *not* seen it,[1] and consequently could not have coasted along the shores of Phœnicia. He probably returned from Alexandria direct to Rhodes. With Asia Minor he was naturally better acquainted, from its proximity to his native country: but even there the very unequal character of his descriptions shows how imperfect was his acquaintance with many parts of that great peninsula. Though a native of Pontus, his description of the neighbouring countries of Armenia and Colchis is but vague and superficial, while of the lands beyond the Phasis, between the Caucasus and the Euxine, he knew no more than what he derived from the historians of the Mithridatic wars.[2]

On his return to his native city Strabo appears to have devoted himself to the composition of a great historical work, to which he gave the title of 'Historical Memoirs' (Ἱστορικὰ ὑπομνήματα), extending to not less than 43 books, and comprising the period from the fall of Carthage and Corinth (B.C. 146), with which Polybius had closed his great work, to the death of Cæsar, or perhaps even to the Battle of Actium.[3] It was not till after he had completed this, that he undertook the composition of his geographical treatise, which he himself calls a colossal work.[4] He must therefore have been already in advanced age, and it required no little energy to enter upon such a task: but we are not reduced to the necessity of adopting the paradoxical conclusion of Groskurd, that he did not commence it till he was in his *eighty-third* year; a statement which would require much better evidence than we possess on the subject to entitle us to receive it. We know indeed with certainty, from historical facts incidentally men-

[1] Id. xvi. 2, § 23. ἐνταῦθα δέ φασι πολυστέγους τὰς οἰκίας, ὥστε καὶ τῶν ἐν Ῥώμῃ μᾶλλον. The fact that the houses were lofty and of many stories, was one which he must have known from personal observation, had he even passed by sea within sight of Tyre.

[2] xi. 2, p. 497.

[3] Strabo, i. 1, § 23, p. 13. It is cited by Plutarch (*Lucull.* c. 28, *Sylla*, c. 26), and he himself refers to it in xi. 9, § 3. The statement that it was in forty-three books rests upon the somewhat dubious authority of Suidas (s. v. Πολύβιος, see Bernhardy's note).

[4] Ibid. p. 14. κολοσσουργία γάρ τις καὶ αὐτή.

tioned, that it was not altogether completed, in its present form, until the year 18 or 19 A.D.: but the period at which it was commenced and the time occupied in its composition are wholly unknown to us. Moreover the birth-year of Strabo, as already mentioned, is itself uncertain, and the assumption of Groskurd that he was born as early as B.C. 66, is a mere inference, and rests upon no satisfactory evidence.[5]

§ 3. The Geography of Strabo is not only the most important geographical work that has come down to us from antiquity; but it is unquestionably one of the most important ever produced by any Greek or Roman writer. It was indeed, so far as we know, the first attempt to bring together all the geographical knowledge that was attainable in his day, and to compose what would be called in modern times a general treatise on geography. It would be a great mistake to regard it (as some German writers have done) as merely a new edition of that of Eratosthenes, with additions and corrections. The general outline of his system was indeed adopted by Strabo, though not without considerable alterations—some of them, as we shall see, very far from improvements: but this could hardly have been otherwise, as the great Alexandrian geographer had been the first to lay the foundations of scientific geography on a basis on which his successors could not but continue to build. But the work of Eratosthenes, which was comprised in only three books, was limited to an exposition of his general geographical system, together with statements of distances and directions, that might serve to determine the configuration of the several countries described. It was merely a technical geographical treatise in the strictest sense, and its small extent alone proves that it could not have contained any such full or detailed description of each country, and its natural productions and peculiarities, as Strabo justly conceived to fall within the domain of the geographer.[6] Still less could it have admitted of those historical and incidental

[5] See Note A, p. 272.

[6] See Chapter XVI. p. 653.

notices which form one of the great sources of interest in the work of the later author. Strabo indeed appears to have been the first who conceived the idea of a complete geographical treatise, as comprising the four divisions that have been called in modern times, mathematical, physical, political, and historical geography, and he endeavoured, however imperfectly, to keep all these objects in view, in the execution of his extensive but well-considered plan.

§ 4. His historical digressions, though in themselves valuable and interesting, especially to us, who have lost so many of the original sources from which they were derived—are sometimes longer than can well be deemed suitable to a geographical work; and this is still more the case with his mythological ones: but to a Greek all the early mythical legends had not only a charm from association, but possessed a vivid reality which we can hardly appreciate at the present day. Strabo discusses questions of the heroic ages of Greece, and the exploits of Hercules and Jason, with as much earnestness as he would those of Alexander and his successors. To him the voyage of the Argonauts to Colchis was as real as that of Columbus or Vasco de Gama to ourselves:[7] and with regard to the Homeric geography he adopted in their fullest extent the views of those who regarded the poet as the source of all wisdom and knowledge, whose statements might require to be explained or accounted for, but could not possibly be discarded as erroneous. The blind reverence paid by most Greeks of his day to the works of the great poet was little short of that with which many other nations are accustomed to regard their sacred books—as an authority paramount to all others, which it was rank heresy to dispute or question. Eratosthenes, as we have seen, had indeed led the way to a more cautious criticism, in this respect: but he appears to have found few followers in

[7] See the passage (i. 2, § 38, p. 45) where he speaks of *τῶν περὶ τὸν Ἰάσονα συμβάντων καὶ τὴν Ἀργὼ καὶ τοὺς Ἀργοναύτας, τῶν ὁμολογουμένων παρὰ πᾶσιν:* and indignantly rejects the idea that Homer could have been ignorant of *what everybody knew.*

these opinions, and Hipparchus, Polybius and Posidonius all accepted the ordinary and received identifications of the localities in the Odyssey without scruple or hesitation.[8]

§ 5. It is remarkable that while Strabo was thus ready to adopt the mythical legends of the earlier days, and even the forms into which they had been worked up by Ephorus and other logographers, he treated the work of Herodotus with altogether undeserved contempt, and classes him with Ctesias and other compilers of fables, whose statements are wholly unworthy of consideration.[9]

On some points, as we have seen, Herodotus had really correct information, where Eratosthenes and other later writers were misled into error—as with regard to the Caspian Sea: on others, his scepticism, though not well founded in fact, was certainly not unphilosophical. But the full information that we possess at the present day, which enables us to discriminate the true from the false, among the conflicting statements on these and other subjects, was wanting in the time of Strabo: and even had he brought to the task more critical sagacity than he actually possessed, it would have been difficult for him without such assistance to have arrived at sound conclusions. In like manner he may be censured for discarding without reserve the accounts of Pytheas concerning the western and northern regions of Europe: but here he was evidently led away by the example of Polybius, for whose judgement and authority he entertained—and not without reason—a high respect. Some of the statements of Pytheas were undoubtedly such as to inspire great doubts of his veracity: and it must be added that they did not correspond with the geographical system of Strabo, in regard to the points on which he differed from Eratosthenes. The love of system was carried to an extreme by almost all the Greeks, and our geographer was certainly not exempt from that failing.

[8] Apollodorus, as we have seen, was an exception, and Demetrius of Scepsis had to some extent adopted the same view. Strabo, i. 2, §§ 35, 38.

[9] i. p. 43, xi. p. 508. On both these occasions he associates the name of Herodotus with those of Ctesias and Hellanicus and other retailers of fables.

Another instance in which he was led to reject the statements of Eratosthenes without sufficient reason was in regard to the island of Cerne on the west coast of Africa, the very existence of which he treats as a fable,[1] though as we have seen there is no reason to doubt that it was long occupied by the Carthaginians as an emporium of trade.

§ 6. Strabo may be still more deservedly censured for the neglect he showed for Latin writers, and the information to be derived from that source. Though he himself points out the great increase in the knowledge of the western parts of Europe that had resulted from the extension of the Roman arms in that quarter, he certainly availed himself to a very small extent of the materials thus placed at his disposal. It is true that no Roman writer of eminence had as yet put forth any professed geographical work; but their historical writings undoubtedly contained much that was of the greatest value to the geographer. Yet in regard even to the west of Europe—Spain, Gaul, and Britain,—Strabo continued to follow principally the Greek authorities; and though he refers in one passage directly to Cæsar's Commentaries,[2] and evidently derived other information from the same source, yet he was far from availing himself of that valuable work to the extent that he might well have done. He appears also to have been unacquainted with the works of his contemporary Juba, from whom, as we have seen, Pliny gathered so much information; otherwise he could scarcely have failed to cite him in regard to Mauretania and Western Africa. But we cannot wonder if Strabo, writing at Amasia, was ignorant of literary works that were well known at Rome, when we find that his own great work, notwithstanding its importance and its great merits, remained for a long period comparatively unknown, and is not even once cited by Pliny in the vast array of authorities which he has brought together.

§ 7. The geographical treatise of Strabo was designed, as he himself tells us,[3] as a kind of sequel to his historical work,

[1] i. 3, p. 47. [2] iv. 1, p. 177. [3] i. 1, § 23, p. 13.

already mentioned; and was intended for the same class of readers, that is to say, for politicians and statesmen rather than for regular students of philosophy. In modern phrase it was meant for the general reader, and not for the mere geographer. It is this purpose which has given to the book its peculiar character, and to which it owes a great part of its merits. The author has refrained from giving us long and dry catalogues of names, such as we find in Pliny and Ptolemy; and has endeavoured to furnish us with a general picture or description of each country, its character, physical peculiarities and natural productions, as well as its geographical configuration. The minute topographical details, and enumeration of obscure places, belong, as he justly observes, to the chorographer, rather than to the general geographer, and must be supplied in each instance according to the point of view of the writer, and the requirements of his readers. It must be admitted that the execution of his plan has fallen far short of the justness of its conception; that in endeavouring to select the more prominent and important names he has often omitted others of at least equal interest; and not unfrequently the scantiness of his notices probably arises in reality from his want of knowledge. But in comparing his geographical details with those of Pliny and Ptolemy we must always bear in mind the essential difference in the character of their works, and must not hastily assume that the earlier geographer was ignorant of names of towns, rivers, or headlands, simply because he has not thought fit to mention them.

§ 8. It is otherwise with regard to the physical geography of the several countries described. In this respect it cannot be doubted that the work of Strabo was a great advance upon all that had preceded it, and it possesses a great superiority over all other geographical writings that have been preserved to us from antiquity. But its deficiencies are not the less glaring, when tested by the requirements of modern science. The directions of mountain chains, the courses of great rivers, and the other natural features, which constitute the geo-

graphical framework of every country, are indeed for the most part briefly indicated, but often passed over in a very summary way, and very rarely described in anything like a regular and systematic manner. Great allowance must be made for defective information, and for the want of instruments with which to make observations; but even after admitting these deficiencies it can hardly be denied that the work of Strabo in this respect falls short of what we might reasonably have expected.

§ 9. In regard to the mathematical portion of his task also it is evident that the qualifications of Strabo were by no means of a high order; and there can be no doubt that in this respect he was inferior to his predecessors Eratosthenes and Posidonius. But as he had the advantage of availing himself of their labours, as well as those of the great astronomer Hipparchus, this was of comparatively little moment. His work, as he himself repeats, was not designed for professed astronomers or mathematicians, and the leading conclusions of those sciences with regard to the figure and dimensions of the earth, its relation to the heavenly bodies, and the great circles of the globe—the equator, the ecliptic, and the tropics—were in his day considered as so well established as to be familiar to every one who had received a liberal education. He accepts also the division into five zones as one generally recognized,[4] though on this point there was considerable difference of opinion among earlier writers, some dividing the torrid zone into two, one on each side of the equator, so as to make six in all. He quotes with approval the assertion of Hipparchus that it was impossible to make any real progress in geography without having recourse to astronomical observations for the determination of latitudes and longitudes;[5] and even gives us in considerable detail the succession of the *climates* as observed by that astronomer—an important contribution to our knowledge of ancient geography, which has been already examined

[4] ii. 5, § 3, p. 111.

[5] i. 1, § 12, p. 7.

in a preceding chapter.[6] In his criticisms of Eratosthenes also he discusses at great length the views of that writer with regard to the latitude of Thule and the position of the northern portions of Europe in relation to it; and censures his errors (or supposed errors) with regard to some other points in his map of the world. But after having once discussed these subjects he scarcely ever adverts to them again, and in determining the extent and dimensions of the countries he describes, according to the varying estimates of different authors, he never attempts to fix them by reference to latitude and longitude.

§ 10. Strabo begins with pointing out,[7] as a reason for his having undertaken anew that which had been already done by many writers before him, that the extension of the Roman Empire and that of the Parthians had added largely to the knowledge previously possessed of the inhabited world; just in the same manner as the conquests of Alexander had done shortly before the time of Eratosthenes. The Romans (he says) had opened out all the western parts of Europe, as far as the river Albis (the Elbe) which divides Germany through the midst, and the regions beyond the Danube as far as the river Tyras (the Dniester). The tracts on the north of the Euxine from thence to the Palus Mæotis, and again along the eastern coast to the borders of Colchis had been first made known by the campaigns of Mithridates and his generals;[8] while the Parthians had furnished more accurate knowledge of Hyrcania, Bactriana, and the Scythian tribes beyond those nations. It has been already pointed out that very little additional information had really been derived from this last source: and the knowledge possessed by Strabo of the Scythian races either in Europe or Asia is singularly meagre and defective.

§ 11. The first two books of his Geography constitute a kind of general introduction to the whole, and while they are much

[6] See Chapter XVII., pp. 4–10.

[7] i. 2, § 1, p. 14; and compare ii. 5, § 12, p. 118.

[8] It is especially singular that he has overlooked the valuable contributions of Herodotus to this portion of geography; but he appears to have treated that writer with such unmerited contempt that he did not even in passing refer to his fourth book.

the most difficult portion of the work, they are at the same time much the most unsatisfactory. A great want of order and method reigns throughout. They comprise, or appear intended to comprise, a historical review of the progress of geography from the earliest days to his own time, but this is done in such an unmethodical and irregular manner as in great measure to fail of his object. We are indeed indebted to this part of the work of Strabo for almost all that we know concerning the geographical systems of his predecessors; especially for that of Eratosthenes. But we have already seen how imperfect that knowledge is, and how defective are our materials for estimating the real merits of the founder of geographical science. Instead of giving us a systematic review of the work of Eratosthenes, or that of any of his successors, Strabo contents himself with criticising individual points, and discusses these at great length, often breaking off in the midst into the discussion of collateral questions, which have no immediate bearing on his subject. Thus, after opening his treatise by justly claiming for the study of geography a place among those included under the name of philosophy, he proceeds to fortify this position by citing the names of men distinguished as philosophers, who had given their attention also to geography, and at the head of the list he places that of Homer, whom he distinctly terms the founder of all geographical knowledge, and no less eminent in this respect than for his poetical excellence and his political wisdom.[9] He then enumerates Anaximander of Miletus and Hecatæus as having followed in the same track,[1] as well as Eratosthenes, Polybius and Posidonius in later times; after which he returns to

[9] i. 1, p. 2.

[1] Of these he tells us only that Anaximander was the first to publish a geographical map, while Hecatæus had left behind him a written treatise (*γράμμα*), which was believed to be his by comparison with his other writings (*πιστούμενον ἐκείνου εἶναι ἐκ τῆς ἄλλης αὐτοῦ γραφῆς*, i. 1, § 11). From this expression it is evident that doubts had been entertained concerning the authenticity of the work extant under the name of Hecatæus. On this point see Chapter V. p. 135.

In another passage (i. 1, § 1) he mentions Democritus, Eudoxus, Dicæarchus, and Ephorus, as having paid attention to the study of geography.

Homer, and sets forth at considerable length the proofs of his extensive geographical knowledge—his acquaintance with the Ocean surrounding the earth, the Ethiopians, the Nomad Scythians to the north, &c. In the course of this exposition he notices the view of Eratosthenes that we ought not to look for philosophical accuracy in a poet, or to attempt to reconcile the wanderings of Ulysses and Menelaus with the true details of geography—a suggestion which he indignantly repudiates, and taking up the subject again, a few pages further on, argues against it at such length that more than half the first book is taken up with the discussion of this subject of Homeric geography.

§ 12. Passing over without further notice the earlier geographers—of whom it would have been interesting to have heard more—and not condescending even to mention the name of Herodotus in connection with this part of his subject, Strabo comes at once to Eratosthenes, whom he censures for having frequently relied upon untrustworthy authorities, especially Damastes; as well as for the doubts he had cast upon the voyage of Jason, and those of other early navigators. He then proceeds to discuss at considerable length the physical views of Eratosthenes concerning the changes that had taken place in regard to the earth's surface: especially the hypothesis, in which he had followed the physical philosopher Straton, of the straits connecting the Euxine with the Mediterranean and the latter with the Atlantic having been formed by sudden disruptions, which had materially lowered the level of these interior seas. In proof of this they appealed to the existence of shells and other marine remains at places remote from the sea, and even at a considerable elevation above it. But Strabo justly rejects the theory in question, and maintains that the phenomena referred to could be better explained by changes in the earth's surface, such as are continually in operation, and producing alternate subsidences and elevations of different portions of the land.[2] In proof of this he cites numerous

[2] i. 3, § 5, p. 51.

instances of the engulfment of towns by earthquakes, the disappearance of islands in the sea, and the throwing up of others, as in the case of one which had recently been thus elevated in the neighbourhood of Thera[3] and another near Methone in Argolis. Such things as thus take place on a small scale, he argues, might equally occur on a large one: and not only is it possible that the Liparæan Islands and the Pithecusæ (Ischia and Procida) may have thus been thrown up above the sea, but it is probable that Sicily itself, instead of being broken off from the mainland (as was the general belief in antiquity[4]) may have been elevated from the depths of the sea by the fires of Ætna.[5] The geological speculations contained in this portion of his work show a soundness of view very unusual among ancient writers on these subjects, and are referred to with well-merited eulogy by Sir C. Lyell.[6]

§ 13. Strabo next proceeds to examine the second book of Eratosthenes, in which that author had laid the foundations of his geographical system; and discusses the length and breadth of the inhabited world, and the division into three continents. He severely censures him, both here and in other passages, for having given credence to the fables of Pytheas, an author whom he considers altogether unworthy of credit; and he is led in consequence to reject entirely the existence of Thule, and the latitude assigned to it by Eratosthenes, who had taken the parallel of Thule for the northernmost limit of the inhabited world. Strabo on the other hand assumes it to be clearly made out by recent investigations that Ierne (Ireland), which was situated *to the north* of Britain, was the farthest land in that direction, and as he supposed Britain itself to be extended lengthwise opposite to Gaul, so that its greatest length was about 5000 stadia (500 G. miles), and its breadth considerably less, while the island of Ierne was not more than about 4000 stadia (400

[3] i. 3, § 16, p. 57. See Note B, p. 274.

[4] This was supposed, with that perverse etymological ingenuity so common among the Greeks and Romans, to be the origin of the name of Rhegium, the city next the strait (Ῥήγιον).

[5] Ibid. § 10, p. 54.

[6] *Principles of Geology*, vol. i. pp. 23, 24, 10th edit.

miles) from the centre of Britain, he arrives at the result that the most northern limit of the inhabited world must be brought down very much farther to the south than the position assigned to it by Eratosthenes. As at the same time he adopts his southern limit—the parallel through the Cinnamon Region and Taprobane—the necessary conclusion is that Eratosthenes had greatly overrated the whole breadth of the world.

It is a striking instance of that love of system and persistent adherence to theoretical conclusions once supposed to be established, so characteristic of the Greeks, that Strabo, after proving, as he conceives, the error committed by Eratosthenes in this respect, immediately adds, that having been thus mistaken with regard to the breadth of the known world, he was *necessarily* led into error with respect to its length; for that all the best writers were agreed that the length was more than double the breadth. As if the proportion between the two were not a simple matter of fact to be determined by measurement and calculation! It is certain indeed that Eratosthenes had started from the same assumption, and had even made additions to the length at each end with the express view of bringing out this result.[7] Of these Strabo rejects the addition at the western extremity, where Eratosthenes had supposed the projecting part of Europe to extend beyond the Sacred Promontory towards the west,[8] but retains that belonging to India, concerning which he had no better information than what he derived from Eratosthenes. His estimate of the length of the known world does not therefore after all differ materially from that of his predecessor.

It is in the course of this discussion that Strabo throws out the remarkable suggestion, that besides the world known to the Greeks and Romans, and inhabited by them, or by races with which they were acquainted, there might be other continents or other worlds unknown to them. The length of the Inhabited World (ἡ οἰκουμένη) was, as he had shown, not more

[7] See Chapter XVI. p. 643.

[8] Posidonius, as we have seen, returned to the old view that the Sacred Promontory was the westernmost point of Europe, and Strabo doubtless in this instance followed his authority.

than about a third part of the total circumference of the globe in the temperate zone; it was therefore possible that there might be within this space two or even more inhabited worlds.[9] But these, as he points out in another passage[1] would be inhabited by different races of men, with whom the geographer had no concern. The manner in which he introduces this speculation as something possible, and even probable,[2] is a striking proof of the philosophic character of Strabo's mind. The well-known passage in one of the tragedies ascribed to Seneca[3] is evidently derived from some such suggestion as this, adopted and amplified by the imagination of the poet.

§ 14. In his second book Strabo continues the examination of the work of Eratosthenes, and discusses the various changes introduced by him into the map of the world. Here he judiciously takes his part in opposition to many of the attacks of Hipparchus, especially to that preposterous distortion of India, and the adjoining parts of Asia, which Hipparchus had introduced anew into the geography of those regions. In regard to the whole of Asia indeed Strabo adopted the map of Eratosthenes with very little alteration. Little or nothing had in fact been added to the knowledge of those countries in the interval, which could affect the general geographical outline. It was only with regard to the countries bordering on the Caucasus and the Caspian that Strabo had acquired any more detailed information than his great predecessor, and even this was of such an imperfect character that he still believed the Caspian to communicate with the northern ocean, as had been asserted by Patrocles.

Equally little change was he able to introduce in the general conception of the continent of Africa, though he

[9] i. 4, § 6, p. 65. *καλοῦμεν γὰρ οἰκουμένην ἣν οἰκοῦμεν καὶ γνωρίζομεν· ἐνδέκεται δὲ καὶ ἐν τῇ αὐτῃ εὐκράτῳ ζώνῃ καὶ δύο οἰκουμένας εἶναι ἢ καὶ πλείους.*

[1] ii. 5, § 13, p. 118.

[2] *ὅπερ ἐστὶ πιθανόν*, he says, in the second of the two passages referred to.

[3] Seneca, *Medea*, vv. 376–380.

Venient annis sæcula seris,
Quibus Oceanus vincula rerum
Laxet, et ingens pateat tellus,
Tethysque novos detegat orbes,
Nec sit terris ultima Thule.

undoubtedly possessed much more information in detail concerning all the portions of that country which had been subject to the Carthaginians, as well as Numidia and Mauretania. But of the western or Atlantic coast he knew nothing more: and while he rejected the statements of Eratosthenes concerning Cerne and other Carthaginian settlements on that coast, he neglected (strangely enough) to avail himself of the valuable new materials, which the voyage of Polybius must certainly have furnished him.

It was principally with respect to Europe, and especially the western and northern parts of that continent that the knowledge possessed by Strabo was greatly in advance of that of the Alexandrian geographer. This he has himself pointed out to us; but while it is perfectly true so far as relates to the geographical details of the several countries described, and the nations that inhabited them, he was so far from having acquired a correct geographical idea of their position and relations, that his general map of Europe is even more faulty than that of his predecessor.

§ 15. We are greatly indebted to the lengthened examination into which Strabo enters of the geographical positions assumed by Eratosthenes, and the criticisms of his successor Hipparchus, for the information thus afforded us concerning their rival geographical systems. The results of this have been already considered. Some interesting notices are also introduced parenthetically in the course of the discussion. But the discussion itself is eminently unsatisfactory, and serves to show all the more strongly how little real progress could be made in scientific geography so long as all accurate observations were wanting. Strabo himself observes that not only were there no observations of latitude—as determined by the shadow of the gnomon, and the length of the longest day—for any part of the mountain chain supposed to extend across Asia from Cilicia to the frontiers of India, but that there was the same want of accurate knowledge with regard to the Alps, the Pyrenees, and the mountains of Thrace, Illyria,

and Germany.[4] Even where observations existed, they were often so defective as to be calculated to mislead rather than to correct, and we have seen that the great astronomer Hipparchus himself had been the means of introducing a grave error, by assigning to Byzantium the same latitude as Massilia.[5] The want of observations of longitude was still more complete: and the conclusions adopted by Eratosthenes with regard to the distances from east to west across the continent of Asia were the result, as Strabo repeatedly tells us, of the examination and comparison of various itineraries.[6] This is undoubtedly the only means open to the geographer under such circumstances, but the liability to error which must always exist in the computation of distances from itinerary routes uncorrected by observations, was greatly increased in this case by the want of any correct bearings.

Still more unsatisfactory is the tedious discussion that follows of the division adopted by Eratosthenes into Sphragides or "Seals"—a discussion which after all leaves us (as already remarked[7]) almost wholly ignorant as to the purpose and meaning of the divisions in question. It is in fact not so much an examination of that part of the system of Eratosthenes, as of the objections brought against certain portions of it by Hipparchus, and an attempt—in some instances certainly successful—to refute these objections. But such a criticism of a criticism, where the original work is lost to us, naturally becomes extremely obscure, and Strabo has taken no pains to put his readers in possession of the subject matter of the controversy. This is the more to be regretted, as the division in consideration, which appears to have been peculiar to Eratosthenes, was certainly of a systematic character, and would therefore have had considerable importance in its bearings on scientific geography.

§ 16. Strabo next proceeds to consider the geographical views of Posidonius and Polybius, and in the course of this

[4] ii. 1, p. 71.
[5] See Chap. XVII. p. 8.
[6] ii. 1, pp. 69, 79.
[7] Chapter XVI. p. 654.

examination has fortunately preserved to us the account given by the former of the voyage of Eudoxus of Cyzicus. This has been already fully considered.[8] With this exception these two sections contain very little of any real value. A considerable space is occupied with a discussion of the division of the terrestrial globe into zones—a suggestion said to have originated with Parmenides, but which was developed in a more systematic form by Aristotle. It was the latter who first defined them in the sense in which they are understood by modern geographers. He regarded the torrid zone as comprising the space on each side of the equator as far as the tropics: and the two temperate zones as extending from the tropics to the arctic circles.[9] It would certainly seem as if the great philosopher had here used the term "arctic circles" in the same sense as that assigned to them by modern geographers, as two fixed and definite circles on the sphere, analogous to the tropics. But the ancients in general used the term in a different sense, so that every different latitude had its different arctic circle:[1] and hence both Posidonius and Strabo agreed in censuring Aristotle for adopting as the limit of the temperate zone a boundary that was itself fluctuating and variable. The former writer fixed as the limit the circle where the *visible* arctic circle coincided with the tropic, which is in fact the same thing that is meant by the modern use of the term Arctic Circle, and is probably what was really meant by Aristotle, however he may have expressed himself.

Polybius had departed from the established division of the earth into five zones, and had maintained that there ought to be six, regarding those on each side of the equator, extending from thence to the tropics, as two separate zones. This innovation is justly rejected by Strabo, who however evidently

[8] Chapter XVIII. p. 75.

[9] Strabo, ii. 2, p. 94.

[1] The term "arctic circle" was generally used by the Greeks to denote the circle in the heavens parallel to the equator which just touches the horizon, and which therefore separates those parallels which are always above, from those which are partly above and partly below the horizon. Of course in this sense every different latitude had a different arctic circle.

failed to see that all such divisions were purely arbitrary, and merely fixed as a matter of convenience. He argues also at considerable length against the extension of the term "torrid zone" to the whole space comprised between the equator and the tropics, a considerable part of which, as he points out, from Syene south to the Land of Cinnamon, was not only habitable, but known to be inhabited. The whole question here arises from his insisting on the term "torrid" (*διακεκαυμένη*) as implying a region so burnt up with heat as to be absolutely uninhabitable: and the only real interest in this discussion is derived from the manner in which it illustrates the fixed conviction of geographers in the time of Strabo, that there *was* such a zone of the earth, rendered uninhabitable by excess of heat, just as the arctic regions were by excessive cold; and which in consequence formed an insuperable barrier to all exploration in that direction.

§ 17. Having thus disposed of the geographers that had preceded him, Strabo at length proceeds[2] to explain the outline of his own views, which is much the most interesting part of his introduction. The astronomical and mathematical part of his subject indeed he passes over very briefly, remarking that on these subjects the geographer may content himself with taking for granted the conclusions of physical philosophers and mathematicians, and that he does not write for persons unacquainted with the elements of those sciences.[3] Thus he begins with assuming that the earth is spherical, and situated in the centre of the universe: he assumes also the division into five zones, and the circles upon the sphere, which as he points out have been derived from the motion of the celestial bodies—the equator, the ecliptic or zodiac, the tropics, and the arctic circles.[4] He adopts also the measurement of the earth's cir-

[2] ii. 5, § 2, p. 110.

[3] Hence, as has been already mentioned (Chapter XVI. p. 619), he censures Eratosthenes for dwelling at unnecessary length upon the proof that the earth was a sphere: a fact which Strabo himself assumes as generally admitted.

[4] It is remarkable that he here uses the term "arctic circles" as something fixed and definite, just as modern geographers do. He evidently employs

cumference, as determined by Eratosthenes: and consequently his division of each great circle into sixtieth parts, each containing 4200 stadia, which is equivalent to reckoning 700 stadia to a degree.[5] He then points out that the whole of the habitable world (*ἡ οἰκουμένη*), with which alone the geographer has to deal, is comprised within a portion of the globe bounded by two parallels of latitude, and two meridians of longitude, so as to constitute a quadrilateral space within the northern hemisphere, nearly coinciding with the temperate zone of that hemisphere, but occupying little more than a third of its whole extent.[6]

§ 18. The form of the habitable world he compares to that of a cloak (chlamys), a comparison which appears to have been generally adopted in his time,[7] on account of its upper or northern portions being supposed to be much more contracted, while it spread out in proceeding southwards. Its greatest length he estimates at 70,000 stadia, and its breadth at less than 30,000. The great diminution that he introduces into this last dimension proceeds from two causes: first, that, as already stated, he discards altogether the existence of Thule, or of any habitable land so far north as the Arctic Circle, and regards Ireland as the most northerly of all known lands: next, that he rejects the latitude assigned by former geographers to Massilia, and brings it down much farther to the south than its true position. We have seen that Eratosthenes, as well as Hipparchus and other geographers, agreed in placing Massilia and Byzantium on the same parallel of latitude—a gross error, inasmuch as the former city lies more than two degrees to the

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the term as equivalent to what he calls elsewhere "the circle that bounds the frigid zone." *κύκλος ἄλλος τούτῳ παράλληλος ὁρίζων τὴν κατεψυγμένην ἐν τῷ βορείῳ ἡμισφαιρίῳ*, p. 112. It is evidently the same as he elsewhere (p. 114) refers to as that *ὅπου ὁ θερινὸς τροπικὸς ἀρκτικὸς γίνεται*, which is, in fact, the same with what we call in modern usage the Arctic Circle.

[5] Strabo, ii. 5, § 7, p. 113.

[6] Ibid. § 6. He here applies to the quadrilateral space thus measured off as the boundary or frame enclosing the inhabited world, the descriptive epithet of *σπόνδυλος*: a term used for the weight employed in spinning, and for other circular and conical bodies; but which would seem hardly suitable to a definite portion cut off from a conoidal surface.

[7] *ἡ δ' οἰκουμένη χλαμυδοειδὴς ἐν τούτῳ νῆσος*. Ibid. Earlier writers, especially Posidonius, had compared the form of the inhabited world to a sling.

north of the latter. But Strabo, while rejecting the observations on which this conclusion was founded, fell into the strange mistake of bringing down Massilia still farther to the south, so as actually to place it as much to the south of Byzantium as it really is to the north. Of course the effect of this error is to distort, to a strange extent, the whole map of the Mediterranean. But its influence upon the portion of the map of Europe to the north is not less unfortunate. As Massilia was a kind of cardinal position from whence he measured the breadth of Gaul across the continent to the Northern Ocean, the effect was to bring down the northern coast of Gaul and the mouths of the Rhine to the same latitude with the Euxine and the mouths of the Danube! As at the same time he adhered to the position erroneously ascribed to Byzantium by Hipparchus, and to the received notion that the mouth of the Borysthenes was nearly due north from Byzantium, he placed the mouth of that river (which is really situated in about 46½ degrees of N. latitude) in the same parallel with the *northern* extremity of Britain, and supposed the Roxolani, who in his time inhabited the tracts adjoining the Borysthenes and the Palus Mæotis, to be, in common with the inhabitants of Ierne (Ireland) the most northerly people in the known world.[8]

So far therefore was positive geography from having kept pace with the increased knowledge of nations and countries which had been undoubtedly acquired in the interval of two centuries from Eratosthenes to Strabo, that it had actually receded; and a comparison of the maps drawn according to the two systems will show that that of the older geographer was, in regard to Europe in general, and especially the basin of the Mediterranean Sea, a much nearer approximation to the truth than that of his successor.

§ 19. The reasoning by which Strabo is led to this unfortunate conclusion is a striking proof of the vagueness of the *data* on which geographers were accustomed to rely, in the

[8] ii. 5, § 7, p. 114.

absence of trustworthy observations. Taking for granted the correctness of the parallel of latitude drawn by Eratosthenes through the whole length of the Mediterranean, from the Strait of the Columns to the Gulf of Issus, which, as we have seen, was assumed to pass through the Sicilian Strait and the Island of Rhodes,[9] he says that "it is generally agreed" that the course from the Columns to the Sicilian Strait lies "through the middle of the sea." Navigators were also "generally agreed" that the greatest width of the sea from the bight of the Gaulish Gulf to the African coast did not exceed 5000 stadia. Massilia therefore, which was somewhat to the south of the inmost recess of the gulf, must be less than half this distance (2500 stadia) from the parallel in question. But the distance from Rhodes to Byzantium is not less than 4900 stadia: the latter city, therefore, must be situated *far* to the north of Massilia.[1]

It is hardly necessary to point out in detail the complication of errors involved in this argument. The main point is the assumption that the voyage from the Columns to the Sicilian Strait was *a direct course from west to east*, and lay *through the middle of the sea* in so literal a sense that it was equidistant from the shores of Europe and Africa. This great error was undoubtedly combined in Strabo's mind with another, which he held in common with all his predecessors, that the north coast of Africa did not deviate very widely from a straight line, instead of advancing, as it really does, so far to the north between the Strait of the Columns and Cape Bon, as to render it impossible in fact to hold a straight course eastward from the Straits.

§ 20. He considers the habitable portion of the world to extend 4000 stadia (400 G. miles) to the north of the mouth of the Borysthenes—meaning probably the city of that name[2]—and this parallel he conceives to pass to the north of

[9] See Chapter XVI. p. 629.
[1] ii. 5, § 8, p. 115.
[2] See Chapter XVI. p. 631. It is a striking instance of the vagueness with which all these discussions and calculations were carried on, that Strabo,

Ierne. That island he describes as "barely habitable on account of the cold,[3] and he applies the same remark to the Scythians inhabiting the regions farthest known to the north of the Borysthenes. The great cold of these countries, which was familiar to the Greeks from the time their colonies first settled to the north of the Euxine, naturally led to the belief of their being situated much farther north than they really are, and tended strongly to confirm the erroneous idea of their position derived from mistaken observations.

The southern limit he places about 3000 stadia beyond Meroë, or 8000 from Syene, which he takes as situated on the tropic. This line he considers as passing through the land of the Automoli or Sembritæ,[4] and the Land of Cinnamon; and regards the lands farther south as uninhabitable from excess of heat. In regard to this limit therefore he followed Eratosthenes, though for some reason, which is not very clearly explained, he placed it at 8800 stadia from the equator instead of 8300, which was the distance assigned by the older geographer.[5]

§ 21. Having thus considered the position and extent of the habitable world with reference to the terrestrial globe, Strabo proceeds to show how a map of it is to be laid down.[6] This, as he points out, is a matter of no difficulty upon a globe, where the curved lines of the parallels of latitude and meridians of longitude, are represented by similar curves. But as such an artificial globe, in order to admit of the countries being represented in sufficient detail, would require to be not less than ten feet in diameter,[7] and after all, but a small part of it would be occupied by the geographical representation of known lands,

like Eratosthenes, always contents himself with using the expression "the Borysthenes," without defining more accurately the point referred to.

[3] *ἀθλίως διὰ ψῦχος οἰκουμένην*, ii. 1, p. 72. Again in another passage (p. 115) he speaks of it as occupied by *ἀγρίων τελέως ἀνθρώπων καὶ κακῶς οἰκούντων διὰ ψῦχος*.

[4] ii. 5, § 14, p. 118.

[5] See Chapter XVI. Note C, p. 664.

[6] ii. 5, § 10, p. 116.

[7] It appears that a globe of this size had actually been constructed by a writer named Crates—probably the Stoic philosopher of the name, better known for his commentaries on Homer and Hesiod—to which Strabo refers as to something well known (*σφαίραν καθάπερ τὴν κρατήτειον*, *l. c.*).

few people could procure one, and in general they must be content with a map on a plane surface. In this case, as he justly observes, all the lines that are circles on the globe must be represented by straight lines, parallel with the equator and the meridian respectively; a proceeding inevitably productive of error, but which as he conceives "will not make much difference;"[8] an assertion somewhat startling to modern geographers, who are accustomed to have recourse to a variety of ingenious contrivances to avoid, or at least diminish, the error resulting from such a process, but which was not far from the truth in Strabo's time. For the greatest error arising from such a mode of plane projection (to use the modern phrase), would really be trifling as compared with those resulting from erroneous estimates of distance, and the want of any accurate observations of latitude and longitude. He therefore proceeds, as he expressly tells us,[9] throughout the rest of his work, to consider the countries as represented on a plane surface in the manner above described. The error of the result would be indeed comparatively unimportant in separate maps of each country, and would only assume any prominence in the general map of the Inhabited World.[1] Even in regard to this, if the parallel of 36° were assumed (as it certainly was by Strabo, in imitation of Eratosthenes) as the fundamental parallel, with reference to which the map was constructed, the error would have comparatively little influence upon the countries bordering on the Mediterranean; while with regard to the more northern parts of Europe, the knowledge of them was as yet much too imperfect for such a cause to produce any appreciable effect.

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[8] διοίσει γὰρ μικρόν, ἐὰν ἀντὶ τῶν κύκλων, τῶν τε παραλλήλων καὶ τῶν μεσημβρινῶν . . . εὐθείας γράφωμεν, *l. c.* He afterwards suggests that the meridian lines might be drawn "a little inclined towards one another;" but again adds that it is of little consequence.

[9] Ibid. § 12, p. 117.

[1] It would be the more conspicuous in this case, if, as Strabo himself recommends, such a map were not less than seven feet in length. (*l. c.*)

As we shall hereafter see, even Ptolemy, while giving an elaborate mode of projection for his *general* map, was contented in his special maps of countries with laying down his parallels of latitude and longitude as straight lines crossing one another at right angles.

§ 22. Before proceeding to describe the different parts of the world in detail, Strabo gives a general outline of the whole, which is instructive and clearly expressed. The "Inhabited World" he considered, in common with all preceding geographers, except Hipparchus, to be a vast island, surrounded on all sides by the ocean, of which the Caspian Sea, as well as the Persian and Arabian Gulfs, were inlets or arms. But by far the most important and extensive of these inlets, as he tells us, was that which extended from the Columns of Hercules on the west to the Euxine and the Gulf of Issus on the east. For this sea,—so familiar to modern geographers by the name of the Mediterranean,—the Greeks had no distinctive name, because it had so long been practically the only one known to them; and Strabo can only distinguish it as "the Inner" or "Our" Sea.[2] But he was fully alive to its importance in a geographical point of view, as affording the key to the conformation and arrangement of all the countries around its shores, and giving rise by its numerous arms and inlets to the broken and irregular character for which Europe was distinguished from Asia and Africa, and which he justly regards as one of the principal causes of its superior civilization and political importance.[3] He accordingly proceeds to describe at considerable length the form and dimensions of this sea, as well as of its subordinate portions, the Adriatic, Ægean, Propontis and Euxine. We have already seen how erroneous were his conceptions of the general form of the Mediterranean especially in regard to its breadth, and the relative position of the coasts of Gaul and Africa. With respect to its length he was better informed; he reckoned 12,000 stadia from the Columns to the Sicilian Strait, 9000 from thence to the coast of Caria opposite to Rhodes, and 5000 from thence to the head

[2] ἡ ἐντὸς καὶ καθ' ἡμᾶς λεγομένη θάλαττα, ii. 5, § 18, p. 121. In the subsequent exposition he never calls it otherwise than ἡ καθ' ἡμᾶς θάλαττα, even the appellation of ἡ ἐντὸς θάλαττα, corresponding to the Internum Mare of the Romans, not having apparently passed into established use, as was the case with the Latin appellation.

[3] Ibid. p. 122. πρὸς ἅπαντα δὲ τὰ τοιαῦτα, ὡς ἔφην, ἡ παρ' ἡμῖν θάλαττα πλεονέκτημα ἔχει μέγα.

of the Gulf of Issus. This gives 26,000 stadia for the whole length of the Mediterranean; a computation in which he appears to have followed Eratosthenes, and which, as we have seen, differs from the truth by little more than a fifth.[4]

Many others of his distances present in like manner a very fair approximation to the truth, though almost invariably erring more or less on the side of excess. The fact appears to be, that deficient as the ancients were in any mode of *measuring* distances at sea, the rough estimates formed by navigators came to be a reasonable approach to the truth where the distances were habitually traversed. Hence their approximate correctness forms a striking contrast with the strange misconceptions entertained even by such a geographer as Strabo of the relative position and configuration of the countries that surrounded the Mediterranean.

§ 23. The same remark applies still more strongly to his description of the countries themselves. Even with regard to such provinces as Spain and Gaul, which he himself describes as being well known to the geographer in his time, since they had been brought under the dominion of Rome, his geographical conceptions were strangely wide of the truth. Thus he describes the Pyrenees as forming a continuous chain from one sea to the other, in a line *from north to south*: and having their direction parallel to that of the Rhine (!)[5] Again, he not only supposed the Sacred Promontory (Cape St. Vincent) to be the most westerly point of Europe, ignoring altogether the manner in which the coast of Portugal projects to the westward, near the mouth of the Tagus: but he was equally ignorant, or negligent, of the still greater projection of the coast of Gaul between the mouths of the Seine and Loire, forming the great Armorican peninsula, and he describes

[4] See Chapter XVI. p. 634.

[5] In defining the boundaries of Gaul he tells us that it was limited on the west by the Pyrenees, and on the east by the Rhine, which was parallel with the Pyrenees (*ἀπὸ μὲν δύσεως ὁρίζει τὰ Πυρηναῖα ὄρη, προσαπτόμενα τῆς ἑκατέρωθεν θαλάττης . . . ἀπὸ δὲ τῶν ἀνατολῶν ὁ Ῥῆνος παράλληλος ὢν τῇ Πυρήνῃ*, iv. 1, p. 177. He again repeats the same statement, ii. 5, p. 128.

the Gaulish Gulf on the Ocean (the Bay of Biscay) "as looking towards the north and towards Britain." He appears indeed to have conceived the northern coasts of Gaul as preserving much the same general direction from the Pyrenees to the mouth of the Rhine, and that the four great rivers, the Garumna (Garonne), the Liger (Loire), the Sequana (Seine) and the Rhine, pursued parallel courses from S. to N.[6] The mouths of these rivers he describes as being all of them opposite to Britain, and consequently affording the most convenient places of passage to that island.[7] Britain itself was a great triangle, having its longest side opposite to Gaul, and extending about 5000 stadia (500 G. miles) in length, so that its south-eastern promontory of Cantium, or Kent, was opposite to the mouth of the Rhine, and the south-western to Aquitania and the Pyrenees.[8]

§ 24. Even his ideas of the geographical position of Italy and Sicily were still very imperfect. Though in one passage he describes Italy, according to the popular notion, as extending from north to south,[9] it is evident that in accordance with his views concerning the position of Massilia and the northern shores of the Mediterranean, he could not have found space for it, without extending it much more to the east than it really does, so that he must have given it an elongated form, somewhat similar to that which it assumed on the Ptolemaïc maps, but extending still more from west to east, and then curving round at its extremity, so as to descend to the Sicilian Strait. His notion of Sicily was still more erroneous. He was of course well aware of the triangular form of the island—an idea familiar to the Greeks from the earliest period—but he supposed the coast from the promontory of Pelorus adjoining the Sicilian Strait to that of Pachynus to have a general direction from east to west instead of from north to

[6] This he expressly states with regard to the Garonne and the Loire, that they were both parallel with the Pyrenees (iv. 2, p. 190), and again (p. 192) that the Seine was parallel with the Rhine.

[7] iv. 5, p. 199.

[8] Ibid., and see ii. 5, p. 128.

[9] ii. 5, § 28, p. 128.

south, while that of Lilybæum was brought down much to the south of Pachynus, in order to bring it within about the real distance of the coast of Africa. The interval between the two he estimates at 1500 stadia, which considerably exceeds the truth, but not more than do most of his maritime distances.[1] This was of course a passage frequently made, and no great error could exist with regard to it: but as Strabo had an entirely erroneous notion of the latitude of Carthage, which he placed more than 5½ degrees to the south of its true position, he was compelled altogether to distort the form of the island in order to make it fit with his assumed hypothesis, and at the same time with the well-known fact of its proximity to the coast of Africa.

He must have found himself in a somewhat similar difficulty with regard to the islands of Sardinia and Corsica, the dimensions of which he gives with tolerable accuracy, and correctly tells us that they extended in a line towards the south and Africa.[2] At the same time he estimates the distance from the southern point of Sardinia to the coast of Africa at 2400 stadia, a statement greatly exceeding the truth,[3] and which, if it be added to the measurements given of the two islands and the intervening strait, would give a result considerably greater than the whole breadth which he has assumed for the Mediterranean. It became therefore necessary to place the two islands in a direction deviating materially from that which he has himself stated them to occupy.

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[1] He here (vi. p. 267) speaks of this distance as *τοὐλάχιστον διαρμα ἐπὶ Λιβύην*, but adds the words *περὶ Καρχηδόνα*; and it is to be suspected that he was really thinking not of the shortest passage to Cape Bon, the nearest point of Africa (the distance of which from Lilybæum is less than 80 G. miles), but of that to Carthage itself, which is nearly 40 miles further.

[2] *ἐπιμήκεις δ'εἰσὶ καὶ παράλληλοι σχέδον αἱ τρεῖς, ἐπὶ νότον καὶ Λιβύην τεταραμέναι*, v. 2, § 8. But of the *three* islands here mentioned, one is Æthalia (Elba), which cannot, with any reasonable allowance for vagueness of expression, be described as parallel to the other two.

[3] The error is in this instance the more surprising as the distance was already much more correctly given by the early geographer Scylax, who states that it was a day and a night's voyage, equivalent, according to his mode of computation, to 1000 stadia, an estimate very near the truth. (Scylax, *Periplus*, § 7.) See Chapter XI. p. 387, note.

§ 25. So difficult is it to reconcile the different statements of Strabo with one another, and to represent the Mediterranean and the countries bordering its shores in the positions which he appears to have conceived them as occupying, that it has been supposed he did not himself attempt to represent them on a map, and was content to adopt the map of the world as settled by Eratosthenes, pointing out and correcting certain errors in it by verbal criticism. But this seems most improbable, especially when we consider the manner in which he gives directions for the construction of such a map, so as to enable any of his readers to frame one for themselves. It is far more natural to suppose that he drew out a map of the world, based for the most part upon that of Eratosthenes (from whose system as a whole he did not deviate widely), but introducing such corrections and alterations as he deemed necessary, where he had, or supposed that he had, better information than the older geographer. But in so doing where he found the *data* furnished him by previous authors at variance, or even contradictory with one another, he would probably settle the matter in a summary manner by some compromise satisfactory to his own mind.

How little indeed he aimed at anything like geographical accuracy, and how vague were the statements upon which he had to rely can hardly be better shown than by taking an island so well known as that of Crete, the position of which might be supposed to be familiar to all. He tells us, first, that according to Sosicrates, who was considered by Apollodorus to be the most accurate writer concerning the island, it was *more than* 2300 stadia in length: while Hieronymus gave the length as only 2000 stadia, and Artemidorus, who reckoned the circumference as only 4100 stadia, must have made the length much less.[4] Again, in regard to its position with relation to

[4] Strabo, x. pp. 474, 475. All these statements greatly exceed the truth. The actual length of the island, as measured on a map in a direct line, does not exceed 140 G. miles, or 1400 stadia. The estimates cited by Strabo were doubtless founded on *itinerary* measurements, which would have been particularly fallacious in the case of an island of so rugged and mountainous a character.

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the surrounding countries, he tells us that its south-western extremity, Cape Kriu Metopon, was distant from the Cyrenaïca two days and two nights' voyage, while Cape Sammonium, the eastern promontory, was four days and four nights' voyage from Egypt, *but others said only three* (!). This distance was reckoned by some at 5000 stadia, *by others at less* (!).[5] He however tells us more definitely in one place that Cape Cimarus, the N.W. promontory of the island, was 700 stadia from Cape Malea, in another that Cape Sammonium was 1000 stadia from Rhodes.[6] Here he appears to have been following some better authorities and these two last statements are not far from the truth: and yet so little real idea had he of the true position of the island that he says, its eastern promontory, Cape Sammonium, does not project far to the east of Sunium (!).[7] It is evident either that he never attempted to reconcile these varying and conflicting statements so as to represent his own geographical ideas upon a map, or that he solved the difficulties thus arising by some process of which he has left us no indication.

SECTION 2.—*Descriptive Geography.—Europe.*

§ 1. In his third book Strabo commences the particular description of the different countries of Europe, beginning with Spain, to which the whole of this third book is devoted. His description of the Iberian peninsula is marked at once by the chief merits as well as the chief defects that characterize his work in general. We have already seen how imperfect was his idea of its geographical form and position, and how distorted his conception of its appearance on a map. But he

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[5] Strabo, x. p. 475.

[6] Ibid. p. 475; ii. 4, p. 106.

[7] Ibid. p. 474, *ὑπέρπικρον τοῦ Σουνίου οὐ πολὺ πρὸς ἕω*. The difference in longitude between the two points really exceeds 2¼ degrees. It would have been nearer the truth to have said that the *western* extremity of Crete was not far to the *west* of Sunium.

was well acquainted with its leading geographical features: the great rivers that traversed it from east to west, the Bætis (Guadalquivir), the Anas (Guadiana), the Tagus, the Durius (Douro), and the Minius (Minho): as well as the Iberus or Ebro, which however he considered as having its course parallel with the chain of the Pyrenees, and consequently flowing from N. to S. On the other side of the valley of the Ebro, and parallel with the Pyrenees, was a chain of mountains to which he gives the name of Idubeda, and which he describes as containing the sources of the Tagus and Durius. From the middle of this range branches off another called Orospeda which trends to the westward, and ultimately takes a turn to the south. Beginning at first with hills of moderate elevation, it gradually rises in height till it joins the range that separates the valley of the Bætis from the coast near Malaca (the Sierra Nevada), which he regarded as the main continuation of this central chain, while other parallel ridges on the north side of the Bætis contained the mines for which Spain was so famous. The Anas and the Bætis had their sources near one another in the range of Orospeda: they are correctly described as flowing at first to the west and then turning off more towards the south. Imperfect as is this outline of the physical geography of Spain, it shows a general acquaintance with the leading features of the country, and a correct appreciation of the manner in which those features determine the character and conformation of its different regions.

§ 2. The whole of the northern part of the peninsula, adjoining the Ocean, he correctly describes as occupied by a tract of mountainous country, extending from the headland of Nerium (Cape Finisterre) to the extremity of the Pyrenees: and the nations inhabiting this quarter, the Callaïci, Astures and Cantabri, which had but lately been brought under the dominion of Rome, were still lawless and predatory tribes, living in a semi-barbarous condition. The account given of their habits of life and customs, which must have been taken by Strabo from previous writers, may probably refer to a period

somewhat earlier than that at which he wrote, but it is at all events curious and interesting. Some of their peculiarities were indeed, as he himself remarks, common also to the Gauls as well as to the Thracians and Scythians,[8] and were probably inherent in their mode of life and the stage of semi-civilization in which they found themselves, rather than belonging to them as a race. The Lusitanians on the west, from the promontory of the Artabri to the mouth of the Tagus, partook to a great extent of the same characteristics, even the inhabitants of the plains and fertile districts having gradually been compelled by the continued incursions of their ruder neighbours to adopt their warlike and desultory habits: but the inhabitants of the Hither province, as it had long been called,[9] occupying the eastern portion of the peninsula, were in a much more civilized state, and even the Celtiberian tribes of the interior, which had cost the Romans such repeated and long continued efforts to subdue them, were gradually settling down under the influence of Roman civilization and of the numerous Roman colonies that had been established among them. The province of Bætica on the other hand, which was occupied principally by the Turdetani in the valley of the Bætis, and the Bastelani between them and the sea coast, was not only completely tranquil and civilized, but had become *Romanized* to such an extent as to have almost entirely laid aside the use of the native language, and adopted Latin in its stead.[1]

This result was mainly owing to the great natural fertility of the country. Strabo can indeed hardly find words to express his admiration of the richness of Turdetania, the modern Andalusia, which had from the earliest times been proverbial for its wealth, under the name of Tartessus,[2] and had continued to enjoy the

[8] iii. 4, p. 165.

[9] The distinction between the two provinces had been established from an early period, and still subsisted in the time of Strabo (iii. 4, p. 166), though, as he observes, the political limits of the divisions fluctuated from time to time.

[1] Strabo, iii. 2, p. 151.

[2] See the well-known passage of Herodotus (i. 163), and those quoted from other writers by Strabo (iii. 2, § 13, pp. 150, 151). In Strabo's time the name had become quite obsolete, and he himself points out its fluctuating and uncertain use by earlier writers,

same pre-eminence under the Phœnicians, Carthaginians, and Romans. It not only produced corn, wine, and oil in great abundance, but wool of first-rate excellence,[3] honey, wax, pitch, kermes, and vermilion (cinnabar); while the sea-coast furnished salt-fish in quantities equal to that of the Euxine. The mouths of the rivers and the estuaries formed by the action of the tides gave peculiar advantage for the export of these various commodities: hence an active and constant trade was carried on, and the ships of Turdetania that sailed from thence to Dicæarchia and Ostia—the two ports of Rome—were the largest of all that were seen in those great centres of commerce.[4]

But in addition to all these varied sources of wealth, Strabo dwells above all upon the extraordinary mineral riches of this favoured tract. In this respect indeed the south of Spain enjoyed a reputation in ancient times similar to that of Mexico or Peru down to our own day. Gold, silver, brass (copper), and iron were found in quantities, as well as of a quality, unsurpassed in any other part of the world. Gold was not only obtained by digging, but by simple washing. The other metals were all derived from mines; and these were worked principally in the mountains near the sources of the Bætis, and extending from thence towards New Carthage: the most valuable of all the silver mines being in the immediate neighbourhood of that city. In the time of Polybius these had given employment to 40,000 workmen, and were said to have yielded 25,000 drachms (about £900) a day; but in Strabo's time the mines had passed into the hands of private persons, and the produce had apparently fallen off.[5]

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some of whom applied it to the whole country, some to a town, some to a river. The last was unquestionably the same with the Bætis or Guadalquivir.

[3] So highly was the wool of this part of Spain valued, that, as he assures us, rams for breeding purposes had been known to fetch as much as a talent each.

[4] iii. 2, § 6, p. 145.

[5] Strabo, iii. 2, §§ 8–10, p. 146. It is amusing to find him noticing among other advantages of Turdetania, its freedom from all destructive wild beasts (*τῶν ὀλεθρίων θηρίων*), *except rabbits* (!), which abounded so much in all parts of Spain as to do great damage to the crops. They were killed by means of ferrets (*γαλᾶς ἀγριάς*), the use of which he describes exactly as it is practised at the present day (Ib. § 6). He relates

§ 3. It is remarkable, that throughout his description both of the natural productions and physical peculiarities of Spain, and of the manners and customs of its inhabitants, Strabo appears to have relied almost exclusively upon Greek authorities, his statements being derived principally from Polybius, Artemidorus, and Posidonius. He indeed speaks in one passage[6] in very disparaging terms of the Roman writers in general, whom he accuses of doing little but copy the Greeks; but it seems impossible that their historians, in relating their long-continued wars with the Spaniards, should not have contributed many facts to the geography of the country. The construction of roads in all directions through Spain, and the itineraries which must certainly have existed in his day of the stations and distances along these, would also have furnished most valuable materials to a geographer that was able to appreciate them. But no attempt is made by Strabo to turn to account these sources of information. The only instance in which he especially refers to the Roman campaigns is that of D. Brutus Callaïcus against the Lusitanians, and the particulars of this he probably learnt from Polybius.[7] Even where he adverts to the construction by the Romans of a great highway from the Pyrenees through Tarraco and Saguntum to the frontiers of Bætica, and thence on to Corduba and Gades, he gives no account of the distances; and contents himself with telling us that Julius Cæsar accomplished the journey from Rome to his camp at Obulco on his way to Munda in twenty-seven days.[8]

In his enumeration of the names of towns and of the native

on this occasion the well-known story of the inhabitants of the Gymnesian Islands (Iviza and Formentera), having sent a deputation to the Roman government to represent that they were absolutely driven out of their homes by the multitude of these animals. What happened in the island of Porto Santo after its discovery by the Portuguese shows that this may have been no exaggeration.

[6] Ibid. 4, p. 166.

[7] iii. 3, p. 152. The campaigns of D. Brutus against the Lusitanians and Callaïci or Gallæcians, by which he earned the surname of Callaïcus, took place in B.C. 138–135, a few years only before Polybius was in Spain with his friend Scipio during the Numantine War.

[8] iii. 4, § 9, p. 160.

tribes in Spain, Strabo has made a judicious selection, and must have followed good authorities, as almost all the names he mentions are well known from other sources, and must have been places of some importance. At the same time he avoids the error into which Pliny and Ptolemy subsequently fell, of loading their pages with obscure and insignificant names. He indeed adds some judicious remarks[9] on the proneness of geographical as well as historical writers to bestow the title of towns and cities on places that were, in fact, mere villages. It was thus that some writers asserted that there were more than a thousand *cities* (πόλεις) in Spain; and even Polybius affirmed that Tiberius Gracchus took or destroyed three hundred *cities* in Celtiberia alone. This exaggeration, as he points out, was the more inexcusable in the case of Spain, as the inhabitants of the interior for the most part lived wholly in villages, and the barren and rugged character of the country was ill adapted to the formation of towns.[1]

§ 4. In the last section of the third book Strabo treats of the islands adjacent to Spain, and describes at some length the Balearic Islands, as well as the neighbouring Pityusæ, both of which were in his day well known: the former especially having received two Roman colonies. He then gives a long account of Gadeira (Gades), which was still at this period one of the most important emporia of commerce in the world; and enters into somewhat idle disquisitions as to its relations with the fabulous island of Erytheia, the abode of king Geryones. In conclusion, he mentions the celebrated Cassiterides, which he describes as ten in number, lying close together, but far out to sea to the north of the port of the Artabri, from which they were separated by a wider extent of sea than that between Gaul

[9] Strabo, iii. 4, § 13, p. 163.

[1] It seems strange to us at first to find the broad corn-growing plains of Old and New Castile included in this character, as wild and barren regions, supporting but a scanty population. But their inclement climate was alone sufficient to produce this impression to a Greek or Italian, and even at the present day a recent writer speaks of "the trackless, lonely, wind-blown plains" of Castile as much exposed to drought, notwithstanding the fertility of the soil, and thinly-peopled in consequence.

and Britain.[2] The inhabitants are described as wearing long black garments, and walking about with long wands in their hands, looking like the Furies of tragedy. They traded in tin and lead, in exchange for which they received pottery, salt, and bronze vessels. The trade with these islands had for a long time been confined to the Phœnicians from Gades, but had been opened out to the Romans by P. Crassus, who visited them in person, and from that time the intercourse was carried on briskly.[3]

It is remarkable that he says nothing, either here or elsewhere, of the proximity of the Tin Islands to Britain:[4] he seems to have regarded them only with reference to Spain, and in connexion with Gades, from whence the trade with them had originally been carried on.

§ 5. The fourth book is devoted to Gaul, Britain and the Alps. His ideas concerning the form and position of Gaul have already been explained, and we have seen how widely they departed from the truth. But erroneous as were his notions in a strictly geographical sense, he was, as in the case of Spain, well acquainted with the general character of the country, the nations that inhabited it, and the main geographical features that determined its conformation. Besides the Alps and Pyrenees he describes the Cemmenus (Cevennes) as a chain of mountains, branching off from the Pyrenees, at right angles, and extending to the centre of Gaul, where it gradually sank into the plain. He mentions also the Jura,

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[2] iii. 5, § 11, p. 175. *αἱ δὲ Καττιτερίδες δέκα μέν εἰσι, κεῖνται δ' ἐγγὺς ἀλλήλων πρὸς ἄρκτον ἀπὸ τοῦ τῶν Ἀρτάβρων λιμένος πελάγιαι.*

[3] Ibid. p. 176. It can scarcely be doubted that this Publius Crassus is the same as the lieutenant of Cæsar, who subdued the Armorican tribes in Gaul, and visited the shores of the Western Ocean (Cæsar, *B. G.* ii. 34); but it is strange that if Strabo had access to the information which he collected, he should still connect the Cassiterides with Spain, instead of Gaul or Britain.

[4] It may be remembered that no mention of the Cassiterides is found in Cæsar. In another passage indeed (ii. 5, p. 120), Strabo speaks of them as lying in the open sea north of the Artabri, "in about the same latitude as Britain:" *νῆσοι πελάγιαι, κατὰ τὸ Βρεττανικόν πως κλίμα ἱδρύμεναι*, the south-western angle of which he regarded as facing the Pyrenees! But this very phrase evidently excludes the supposition that they were in its immediate vicinity.

under the name of Iourasios, and describes it as separating the Helvetii from the Sequani, who inhabited the region known in modern times as Franche Comté.[5] With the Rhone and its tributaries he was well acquainted, and describes very correctly the confluence of the Dubis (Doubs) with the Arar (Saône), and that of the latter river with the Rhone, but he erroneously supposed both the Arar and the Dubis—as well as the Sequana (Seine)—to take their rise in the Alps—showing how vague was his knowledge of the relations of the different mountain-chains in this part of Gaul.[6] He was familiar also, as already mentioned, with the great rivers that flowed into the Ocean—the Garonne, Loire, and Seine—all of which he conceived to flow, in a general way, from south to north, parallel with the Rhine and the Pyrenees. And he was fully alive to the remarkable advantages derived by Gaul from the facilities of internal communication afforded by these rivers, which approached so near to each other that a very short passage over land was needed from the Saône to the Seine on the one hand, and from the Rhone to the Loire on the other.[7] These facilities were in his time turned extensively to account:[8] and a flourishing transit trade was carried on from the ports on the Ocean to those of Narbo and Massilia on the Mediterranean. Burdigala (Bordeaux) at the mouth of the Garonne was already an important emporium of trade. The names of the sea ports at the mouths of the other two great rivers, the Loire and the Seine, Strabo has unfortunately omitted to mention. Corbilo, which had formerly been the chief port on the Loire,[8] had in his time ceased to exist.

§ 6. His description of the Roman Province, or Gallia Narbonensis, as it was now beginning to be called, is minute and accurate, and he clearly points out the difference of its climate, which distinguished it from other parts of Gaul, and more nearly approached to that of Italy.[9] With the rest of Gaul his

[5] iv. 3, § 4, p. 193.
[6] iv. 3, § 2, p. 192.
[7] iv. 1, § 14, p. 189.
[8] Polyb. ap. Strab. iv. 2, § 1, p. 190. See Chapter XVII. p. 19.
[9] iv. p. 178. The whole of the Narbonitis (he says) produces the same fruits as Italy. But as you advance to

acquaintance was comparatively superficial, but he had here an excellent authority before him in Cæsar, of whose Commentaries he made great use, and whom he generally follows in regard to the names and divisions of the Gaulish tribes. A more recent authority was indeed available in his time in the inscription on the altar at Lyons erected in honour of Augustus by the combined nations of Gaul, and which bore the names of sixty tribes or states (civitates).[1] But Strabo does not appear to have derived any assistance from the materials furnished by this document. Nor do we find him making any use, for the purposes of his geographical description, of the lines of road which the Romans had already constructed through the country: though he himself tells us that Agrippa had made four such lines of highway, all proceeding from Lugdunum (Lyons) as a centre. The first of these proceeded through the Cevennes to the Santones and Aquitania; the second led to the Rhine; the third to the shores of the Ocean, adjoining the territory of the Bellovaci and Ambiani; and the fourth to the Narbonitis and the neighbourhood of Massilia.[2] From thence another line branched off by Tarasco to Nemausus and Narbo, and thence to the passage of the Pyrenees. This last he describes minutely, as well as another branch proceeding from Tarasco through the land of the Vocontii to Ebrodunum (Embrun), and thence over the Mont Genèvre to Ocelum in Italy.[3] This was in his day one of the most frequented passes over the Alps. But his accurate details concerning these roads through the Roman province, which had existed long before, render the absence of them in regard to the great central lines the more striking.

There can be no doubt that his knowledge of the parts of

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the north, and to Mount Cemmenus, the country ceases to produce olives and figs, though other things still grow. As you advance farther, the vine also does not readily ripen its fruit. But the whole country bears corn, millet, acorns, and all kinds of cattle.

[1] Strabo, iv. 3, § 2, p. 192. This altar is again referred to by Dion Cassius (liv. 32), by Suetonius (*Claud.* 2), and by Juvenal (*Sat.* i. v. 44). Unfortunately no record has been preserved to us of the inscribed names.

[2] iv. 6, § 11, p. 208.

[3] iv. 1, § 3, pp. 178, 179.

Gaul adjoining the Ocean was very imperfect: the vagueness and generality of his notices of this part of the country contrasts strongly with the detailed accuracy of his description of the regions adjacent to the Mediterranean and the Pyrenees. The only exception is with regard to the Veneti, of whose naval power and the construction of their ships he gives a full account; but this is taken directly from Cæsar.[4] Of the other Armorican tribes he mentions only the Osismii, whom he identifies with the Ostimii of Pytheas, and states that they dwelt upon a promontory projecting a considerable distance into the sea, but not to the extent maintained by that writer, and those who followed him. It is evident that Strabo had here no correct information, and had no idea of the real extent and magnitude of the Armorican promontory. He apparently conceived the Veneti, who, as he learned from Cæsar, carried on an extensive trade with Britain, to be situated opposite to that island.[5]

§ 7. With regard to the division of Gaul he begins by stating in accordance with Cæsar that it was divided into three nations, the Aquitanians, the Celts or Gauls properly so called, and the Belgæ. The Aquitanians were, as he justly observes, a wholly distinct people from the Celts, and more nearly resembled the Iberians. In this ethnographical sense they were bounded by the Garonne to the north: but in the reorganization of Gaul by Augustus, that emperor had extended the limits of Aquitania to the Loire, thus uniting fourteen tribes of Celtic origin with the Aquitanians properly so called. The rest of Gaul was divided into the provinces of Gallia Lugdunensis and Belgica: but Strabo differs from all other writers

[4] iv. 4, § 1, p. 194. Compare Cæsar, *B. G.* v. 13.

[5] Strabo, iv. 4, § 1. He may in part have been misled by Cæsar's expression, where, after enumerating the maritime nations that sent auxiliary forces to the Veneti, including the Osismii and Lexovii, as well as the Morini and Menapii, he adds, "auxilia ex Britannia, *quæ contra eas regiones posita est*, arcessunt" (*B. G.* iii. 9). There is nothing in Cæsar to show whether he was acquainted with the configuration of the coasts of Brittany and Normandy; he twice mentions the name of the Osismii among the Armorican tribes, but with no further indication of their position (*B. G.* ii. 34; vii. 75).

in extending the latter province along the shores of the Ocean from the mouths of the Rhine to those of the Loire, so as to include the Veneti and Osismii among the Belgic tribes.[6] This is probably an error, but Strabo himself remarks that the geographer does not require to take much pains with regard to the merely political and administrative divisions of countries where these do not coincide with natural boundaries.

His account of the manners and customs of the Gauls, as well as of their religious rites and ceremonies, is taken almost entirely from Cæsar, but with the addition of some circumstances of more dubious authenticity, which he derived from Posidonius, Artemidorus, and other Greek authorities. He adds however that the Gauls were rapidly becoming civilized, and imitating the Roman manners, as well as adopting their language. This change had already taken place to a great extent in the Roman province, or Narbonitis, where the native tribes had been stimulated by the example of the Massaliots, and begun even to devote their attention to literature and study: and it was from thence extending itself by degrees into the neighbouring parts of Gaul.[7]

§ 8. Of Britain he had very little knowledge beyond what he derived from Cæsar. We have already seen that he erroneously conceived the south coast of Britain to extend opposite to that of Gaul, from the mouths of the Rhine to the Pyrenees, and that the interval was throughout much the same, so that the distance was not much greater from the mouths of the Garonne and the Loire than from those of the Seine and Rhine. But the nearest point, he correctly adds, was from the Portus Itius, in the land of the Morini, from whence Cæsar sailed on his expedition to the island: the distance at this point being only 320 stadia. It is strange however that he altogether rejects the statements of Cæsar with regard to the dimensions of the island, and regards the side opposite to Gaul—the length of which he estimates at the utmost at

[6] Strabo, *l. c.*

[7] iv. 1, § 12, p. 186.

5000 stadia—as the longest side of Britain, instead of being, as Cæsar had described it, and as it really is, by much the shortest.[8] He consequently gave to the island a very inconsiderable extension towards the north, so as to bring its most northerly portions into the same latitude as the mouths of the Borysthenes, and only 8700 stadia, or 14½ degrees of latitude north of the Strait of the Columns.[9]

No attempt had been made since the time of Cæsar to subjugate Britain, but the native princes had entered into friendly relations with the Roman Emperors, and a considerable commerce was carried on with the island. Among the products exported from thence Strabo enumerates gold and silver as well as iron, but makes no mention of tin: besides these, he says, it furnished corn, cattle, hides and slaves, and dogs for the chase of a very fine breed. The climate was milder than that of Gaul, but very subject to mists, so that even in bright weather the sun was only visible for three or four hours in the day.[1]

Ierne or Ireland he conceived, as has been already mentioned, and as he himself repeatedly states, to be situated *to the north* of Britain. Its length was greater than its breadth, but he does not give an estimate of either: nor does he in this place say anything of its distance from Britain. But he elsewhere states that the interval was not known with any certainty.[2] He however regarded it as the most northern of all known lands, and as barely habitable on account of the cold.[3] Of its inhabitants little was known: they were said to be mere savages, addicted to cannibalism, and holding promiscuous intercourse with their women. But Strabo himself

[8] Strabo, i. 4, § 3, p. 63; iv. 5, § 1, p. 199. See Chapter XIX. p. 127.

[9] Id. ii. 5, § 78, pp. 114, 115.

[1] Id. iv. 5, §§ 2, 3. In another passage (ii. 5, p. 115) he tells us that the Romans purposely refrained from conquering the island, in order to avoid the expense of maintaining it.

[2] ii. 5, § 8, p. 115. τὸ δ' ἐκεῖθεν ἐπὶ τὴν Ἰέρνην οὐκέτι γνώριμον, πόσον ἄν τις θείη. Again, in another passage (ii. p. 72), he tells us that Ierne was not more than 5000 stadia distant *from Gaul:* a statement that he must have found some difficulty in reconciling with his own system.

[3] See the passages cited in note to p. 232.

adds that he had no trustworthy authorities for these facts. The other islands around Britain he treats as unworthy of notice, and mentions Thule only to repeat his disbelief of the account of it that had been given by Pytheas.[4]

§ 9. He next returns to speak of the Alps, his knowledge of which shows, as might be expected, a great advance upon that of Polybius. Indeed the recent subjugation of the Alpine tribes under Augustus, and the frequent communication held by the Romans with their Transalpine provinces, had necessarily led to a much more familiar acquaintance with these mountains. Hence Strabo is not only able to give us many interesting particulars concerning the different nations inhabiting the Alps and a correct description of their localities, but his account of the mountain chain itself shows a clear idea of its general form and configuration, and of the rivers that flowed from it. Thus he describes the Alps as forming a great curve having its concave side turned towards the plains of Italy, its centre in the land of the Salassians, and its two extremities bending round, the one by Mount Ocra, and the head of the Adriatic, the other along the sea coast of Liguria to Genoa, where they join the Apennines.[5] In another passage[6] he fixes the termination of the Maritime Alps with more precision at Vada Sabbata (*Vado*), 260 stadia from Genoa, which almost exactly coincides with the view generally adopted by modern geographers. The highest summits of the whole range he supposes to be those in the land of the Medulli (between the Mont Genèvre and the Petit St. Bernard), where the direct ascent of the mountains was said to be not less than 100 stadia and the descent on the other side into Italy the same distance. Here among the hollows of the mountains was a lake, and two sources, from one of which flowed the Druentia (Durance) into Gaul to join the Rhone; from the other the Durias (Dora) to

[4] Strabo, iv. 5, § 5, p. 201. Of the Cassiterides he had already spoken, in connection with Spain, and evidently did not regard them as belonging to the group of the Britannic Islands (see above, p. 245).

[5] v. 1, § 3, p. 211.

[6] iv. 6, § 1, p. 202.

join the Po.[7] That river itself had its sources in the same neighbourhood, but at a lower level, and was swelled in its course by the junction of many tributaries.[8] In like manner he tells us correctly that the Rhone and the Rhine had their sources near to one another in the Mount Adula (Ἀδούλας);[9]—the only distinctive appellation of any particular group which he mentions—and that they each formed a large lake in their course lower down.[1] He was also aware of the true source of the Danube, which he well describes as lying in a detached ridge of mountains, beyond the Rhine and its lake, adjoining the Suevi and the Hercynian Forest.[2]

With the eastern extremity of the Alps, where the chain sweeps round the head of the Adriatic he was also well acquainted, and gives a curious account of the commerce that was carried on in his day over the Mount Ocra—which he correctly describes as the lowest part of the Alps—from Aquileia to a place called Nauportus or Pamportus on the Save. It was by this route that Italian goods were conveyed into Pannonia and the other countries on the banks of the Danube.[3] The other mountaineers of the Alps also carried on some trade with Italy, bringing down resin, pitch, wax, honey, and cheese. In his time they were become tranquil subjects of Rome, and had laid aside the predatory habits which they had practised for centuries.

§ 10. Augustus, who had completed the subjugation of the mountain tribes, had also, he tells us, bestowed great pains upon the construction of roads through their country: and had rendered these practicable for carriages, wherever the natural difficulties were not too great.[4] Still the number of high

[7] iv. 6, § 5, pp. 203, 204.
[8] Ibid. p. 204.
[9] Ibid. § 6, p. 204. He adds that the Aduas (Adda), which formed the Lake Larius, had its sources in the same mountain group.
[1] Of these he was well acquainted with the name of the Lake Lemanus, through which the Rhone flowed; but apparently knew no name for the lake formed by the Rhine, though it had recently attracted attention during the campaign of Tiberius against the Vindelici, who had actually established a naval station on the only island it contains (Strabo, vii. 1, § 5, p. 292).
[2] iv. 6, § 9; vii. 1, § 5.
[3] iv. 6, § 10, p. 208.
[4] iv. 6, § 6, p. 204.

roads thus opened was but small. Of the two passes leading from the valley of the Salassi to Lugdunum, the one through the Centrones (the Little St. Bernard) which was the longer and more circuitous was available for carriages, the other across the Pennine Alps (the Great St. Bernard) was more direct, but narrow and steep, and not practicable for carriages. The road through the Graian Alps, and the petty kingdom of Cottius (the Mont Genèvre)[5] was apparently also open to carriages, and was one of the most frequented passes in the Roman times. No mention is found of any other pass between the Great St. Bernard and that through the Rhætians (the Brenner pass in the Tyrol) which from its comparative facility must have been frequented in all times. But Strabo, with a want of method often found in his work, while censuring Polybius for noticing only four passes across the Alps, has omitted to give us any regular enumeration of those known and frequented in his own day. He describes in strong terms the natural difficulties of these passes, the frightful chasms and giddy precipices along which the narrow roads had to be carried, as well as the avalanches of snow, which were capable of carrying away whole companies of travellers at once. These he ascribes with remarkable precision to the sliding of great masses of snow, congealed by successive frosts, one over the other.[6]

§ 11. The fifth and sixth books are devoted to the description of Italy and the adjoining islands, with which he was of course well acquainted, and for the topography of which he had abundant materials at his command. We have already seen how erroneous was his conception of the true position and configuration of the peninsula, as it would be represented on a map; but with its general features he was naturally familiar, and his outline of its physical geography is on the whole clear and satisfactory. The leading natural features of Italy are indeed so strongly marked by nature that it would be difficult not to

[5] This route is described in detail, iv. 1, § 3, p. 179.
[6] iv. 6, § 6, p. 204.

seize them correctly. Such is in the first place the broad valley, or rather plain, of the Po, bounded by the great chain of the Alps on the north and by the inferior, but scarcely less marked, range of the Apennines to the south, and gradually passing into the lagunes and marshes of Venetia and the low country near Ravenna. The Apennines also are well described by Strabo as extending directly across the whole breadth of the land, from the frontiers of Liguria and Tyrrhenia on the one sea to the neighbourhood of Ariminum and Ancona on the other, and then turning inland so as to divide the peninsula into two through its whole length, but keeping nearer to the Adriatic till they turn off again in Lucania, and after passing through Lucania and Bruttium end in the promontory of Leucopetra not far from Rhegium.[7] He compares the peninsular portion of Italy—excluding the two projecting spurs or promontories of Iapygia and Bruttium—with that of the Adriatic Sea adjoining it:[8] rather a singular comparison and rendered more so by his adding that the length of each is not much less than 6000 stadia (600 G. miles), a great exaggeration, as the distance from Ariminum to the extremity of the Iapygian peninsula (thus *including* the latter, which Strabo *excludes*) is little more, as measured on the map, than 360 G. miles.[9]

This last statement is probably copied from some of his earlier Greek authorities: and indeed throughout this portion of his work we find him fluctuating between two sets of authorities—the earlier Greek writers, to whose statements he clings with a strange tenacity, even in regard to matters on which much better sources of information were open to him, and the more recent statements of Roman writers, based upon more accurate measurements and itineraries. Among the latter especially we find him repeatedly citing an anonymous author whom he calls "the chorographer," and of whom all that we

[7] v. 1, § 3, p. 211.
[8] Ibid.
[9] Strabo had apparently, in common with the earlier geographers, an exaggerated notion of the length of the Adriatic, and adapted his ideas of Italy to it. The Antonine Itinerary gives the distance (by road) from Ariminum to Brundisium at 524 Roman miles, or 420 G. miles.

know is that from his giving the distances in miles it may be fairly inferred that he was a Latin, not a Greek, author.[1] Whether this anonymous work was based mainly on the itineraries and consequently confined chiefly to distances, cannot be affirmed with certainty, nor do we know from what sources Strabo derived his knowledge of the topography of those parts of Italy which he had not himself visited, but it is certain that these topographical details are for the most part very correct, and the order in which the numerous towns mentioned are enumerated is generally systematic and well chosen. It is clear indeed, as has been already shown, that maps of Italy were well known, and probably not uncommon, in the time of Strabo, and the clear and methodical character of his description certainly gives the impression of having been written with such a representation before him. At the same time the more lively and graphic manner in which he describes particular localities—as for instance the Port of Luna, Volterra, Populonium, and the greater part of Campania—points clearly to being the result of personal observation. His account of Northern Italy on the other hand, in which he gives many interesting details concerning the marshes and lagunes of Venetia and the coast of the Adriatic from Altinum to Ravenna, and his description of the site of the latter city—a position almost exactly resembling that of Venice at the present day[2]—must probably have been derived at second-hand from some other writer. He follows the popular Roman notion that the Padus was the largest river in Europe except the Danube:[3] but rejects without hesitation its identification with the famous Eridanus, which he treats as a wholly fabulous stream.[4]

In describing Campania he takes occasion to give us some

[1] On this subject see the note to p. 177, Chapter XX.

[2] v. 1, § 7, p. 213. It is remarkable also that he notices the *tides* in this part of the Adriatic, which is, as he observes, the only part of "our sea," which is affected in this respect like the Ocean. Ibid. § 5, p. 212.

[3] εἰς δὲ τὴν Ἀδριατικὴν θάλατταν ἐκπίπτει (ὁ Πάδος sc.), μέγιστος γενόμενος τῶν κατὰ τὴν Εὐρώπην ποταμῶν πλὴν τοῦ Ἴστρου, iv. 6, § 5, p. 204.

[4] τὸν Ἠριδανόν, τὸν μηδαμοῦ γῆς ὄντα, v. 1, § 9, p. 215.

curious particulars concerning the volcanic eruptions of which it had been the scene, particularly of one of Mount Epomeus in the island of Pithecusa (Ischia), which had been described by the historian Timæus, having happened not long before his time.[5] On the other hand he has recorded his sagacious observation of Mount Vesuvius, that it had every appearance of having once been a burning mountain, but which had gone out for want of fuel.[6] It was little suspected by any one how soon it was destined to resume its activity.

The account of the south of Italy—Lucania, Bruttium, Iapygia, and Apulia, which occupies the greater part of the sixth book, is mainly derived from Greek authorities, and taken up to a great extent with historical particulars concerning the Greek colonies which bordered the whole of these shores. Many of these are of much interest and would be otherwise unknown to us, but not strictly of a geographical character. In describing the Apulian coast he treats of the distances along the Adriatic generally, and points out the discrepancy between "the chorographer" and his Greek authorities, Artemidorus especially; and takes the opportunity of commenting on the diversity frequently found in this respect among different authors.[7] When he has no means of determining between them, he adds, he contents himself with repeating the conflicting statements: but it does not seem to have occurred to him that the Roman authorities, having the advantage of measured roads, were in most cases, if not in all, entitled to the greater credit.[8] In describing Brundusium he notices briefly the course of the Appian Way—the great highway from Rome to the provinces of the East, which in his

[5] v. 4, § 9, p. 248.

[6] ὡς τεκμαίροιτ' ἄν τις τὸ χωρίον τοῦτο καίεσθαι πρότερον καὶ ἔχειν κρατῆρας πυρός, σβεσθῆναι δ' ἐπιλιπούσης τῆς ὕλης, v. 4, § 8, p. 247.

[7] vi. 3, § 10, p. 285.

[8] In this instance the chorographer gave the distance from Brundusium to the Garganus at 165 (Roman) miles, and from thence to Ancona at 254 miles. The first distance is almost precisely correct, according to the Itineraries, which give 167 miles from Brundusium to Sipontum (Manfredonia); but the second falls considerably short of that given in the Itineraries, which amounts to 281 miles. It is probable, however, that in this instance the latter exceed the truth.

day consisted of two main branches, the one, practicable for carriages, leading from Brundusium to Tarentum, and thence direct through Venusia to Beneventum: the other, practicable for mules only, proceeding through Egnatia, Canusium, and Herdonea, and rejoining the main line at Beneventum.[9] He gives the whole distance from Rome to Brundusium as 360 miles, which is almost precisely correct, the distance by the first of the two roads described being 358 miles according to the Antonine Itinerary.[1]

§ 12. He describes Sicily at considerable length, and on this occasion gives us the distances furnished him by "the chorographer" in detail, showing the nature of the materials on which that author relied. Nor does his estimate of the dimensions of the island differ widely from the truth; though, as we have already seen, he had such a distorted idea of its position, and the bearings and directions of its three sides. But he had never himself visited the island, and his description is neither very complete nor very accurate. He draws indeed a lamentable picture of the state of decay to which it was reduced in his time, notwithstanding its great natural fertility, so that many of the towns had altogether disappeared, while the interior was abandoned almost entirely to shepherds;[2] and on this account he dwells the less carefully upon topographical details.

Of the physical geography of the island he does not attempt to give any general view, but dwells at considerable length upon the peculiar characters of Ætna, and the volcanic phenomena to which it was subject. Of the streams of lava especially he gives an accurate and philosophical account, pointing out how the burning matter that overflows from the crater in a liquid state gradually hardens into a compact and hard rock, like a mill-stone.[3] He notices also the great fertility of the soil produced by the volcanic ashes for the growth of vines: a

[9] vi. 3, § 7. It would seem that in his time the name of the Appian Way was confined to the portion from Beneventum to Rome, after the junction of the two branches.

[1] Itin. Ant. pp. 107–111, 120.

[2] vi. 2, § 6, p. 272.

[3] vi. 2, § 3, p. 269.

circumstance that he had already observed in regard to Vesuvius.[4] Much of this description appears to be taken from Posidonius: but Strabo adds an account of the appearance of the summit and the actual condition of the crater, as he had heard it from persons who had recently made the ascent.[5] It is evident therefore that in his time it was not uncommon for inquisitive travellers to make the ascent, which really offers no difficulties. He gives us also many interesting particulars concerning the volcanic phenomena of the Æolian Islands, especially of the remarkable eruption that had thrown up a small islet or rock out of the sea in the neighbourhood of the island called by the Greeks Hiera, as being above all others sacred to Vulcan, and the scene of his subterranean operations.[6] Both this island and that of Strongyle (Stromboli) seem to have been at this period in a state of constant volcanic activity.

§ 13. Of the other two great islands of the Mediterranean, Sardinia and Corsica, Strabo has given but a very brief and imperfect account.[7] Both of them indeed were in ancient times, as they have continued almost to our own day, in a state of semi-barbarism little corresponding with their size and their natural resources; and though they had long been brought under the direct authority of Rome, the mountaineers of the interior continued in both islands to lead a lawless and barbarous life, plundering their neighbours in the plains, and only checked from time to time by the Roman governors, who would make a *razzia* for the purpose of carrying off slaves, but never attempted to exercise any permanent authority over these wild districts.[8] Some parts of Sardinia, however, as Strabo

[4] v. 4, § 8, p. 247.

[5] *οἱ δ' οὖν νεωστὶ ἀναβάντες διηγοῦντο ἡμῖν*, vi. 2, § 8, p. 274.

[6] vi. 2, § 11, p. 277. This outbreak, which was related by Posidonius as occurring within his own memory (*κατὰ τὴν ἑαυτοῦ μνήμην*), was almost certainly the same event as that mentioned by Pliny, and referred by him to the 3rd year of the 163rd Olympiad (B.C. 126). It is noticed also by Orosius and Julius Obsequens; but Orosius describes a similar phenomenon, the emergence from the sea of an island not previously existing, as taking place 60 years earlier (B.C. 186). It is probable that the small island, now called Vulcanello, is due to one or other of these eruptions.

[7] v. 2, § 7, pp. 224, 225.

[8] v. 2, § 7, p. 225.

observes, were fertile and produced abundance of corn, but they suffered much from unhealthiness, as well as from the depredations of their neighbours in the mountains. The only towns of any importance were Caralis and Sulci.[9]

It has already been pointed out that Strabo committed a strange error with regard to the geographical position of Sardinia and Corsica, as well as that of Sicily: and it is a striking instance of his disregard for real geographical accuracy, that he repeats the measurements given by the anonymous chorographer, both for the length and breadth of the two islands, and for the distance from Sardinia to Africa, without perceiving, or at least without noticing, how entirely they were at variance with his own system and arrangement.[1]

§ 14. Returning to the north of Europe, Strabo proceeds, in the seventh book, to give a brief general account of the countries extending from the Rhine eastwards to the Borysthenes and the Tanaïs, and situated to the north of the Danube, which he describes as cutting the whole of this eastern half of Europe into two divisions.[2] No part of his work is more defective than this. Imperfect as was the knowledge actually possessed of these regions, he was far from turning to account all the information concerning them that was really available in his day. In regard to Germany, indeed, he did not fail to make use of the new discoveries that had been opened out by the campaigns of Drusus and Germanicus, which had extended, as he observes, the knowledge of Germany from the Rhine to the Elbe.[3] He mentions also the intermediate rivers; the Amisia (Ems), and the Visurgis (Weser), as well as the minor confluents the Lupia (Lippe) and the Salas (Saale). All these streams, as we have seen, had attracted attention in the Roman wars. He mentions also the principal names of German tribes and nations, with which the same wars had rendered his contemporaries familiar, though with very little attempt to explain

[9] Ibid.
[1] Note C, p. 275.
[2] διαιρεῖ γὰρ οὗτος ἅπασαν ὡς ἐγγυτάτω δίχα τὴν λεχθεῖσαν γῆν, vii. 1, § 1.
[3] vii. 1, § 4, p. 291.

their topographical relations, of which he had probably very imperfect knowledge. He describes at some length the Hercynian Forest, which according to his conception constituted one of the main physical features of the country, extending from the Lake of Constance and the sources of the Danube[4] to the northern frontier of Bohemia and Moravia, including within it (*i.e.* between it and the Danube) a tract of fertile country, occupied in part by the Quadi and Marcomanni, who had recently taken possession of the district previously known as Boiohemum (Bohemia).[5]

But beyond the Elbe he tells us that everything was entirely unknown; an ignorance which he ascribes in great part to the policy of Augustus in preventing his generals from carrying their arms beyond that river:[6] and while he rejects as fables the tales that were related by Greek writers of the Cimbri, who had long been known by a kind of vague tradition as dwelling on the northern Ocean,[7] he has nothing to substitute in their place. Even of their geographical position he had no clear notion, and would have led us to imagine that they dwelt on the west side of the Elbe; he only notices the belief that they inhabited a peninsula in connection with the tradition (which he rejects as a fable) that they had been expelled from it by an irruption of the sea.[8] Of the great Cimbric Chersonese or Promontory, as a geographical feature, he had evidently no idea, or of the bay beyond it (the Codanus Sinus of Latin writers), though some vague accounts of both had certainly reached the Roman authorities in his day.[9] Nor does he condescend to notice the tradition adopted by some earlier authors of the existence of a great island in this part of

[4] vii. 1, § 5.

[5] Ibid. § 3. This name appears in Strabo in the slightly distorted form Βουΐαιμον: but he terms it the βασίλειον, or royal residence, of Maroboduus. and appears therefore to have conceived it as a town, rather than a country or region.

[6] Ibid. § 4. p. 291.

[7] The Cimbri were certainly known to Posidonius (ap. Strab. vii. 2, p. 293), and apparently at an earlier period, as that author found fault with the fables related concerning them. The irruption of the Cimbri and Teutones into Gaul and Italy (about 100 B.C.), must have made the Romans familiar with the *name*, and would naturally excite curiosity as to their original abodes.

[8] Strabo, vii. 2, § 1, p. 292.

[9] See Chapter XX. p. 191.

the northern Ocean—the Basilia of Timæus and the Abalus of Pytheas. Even the name of the Vistula, which was certainly known to the Romans in his day, finds no place in his geography, and it is strange that he does not even allude to the trade with these regions for amber, which attracted so much attention both among Greeks and Romans.

The whole coast of the Ocean beyond the Elbe, he expressly tells us,[1] was utterly unknown, nor had any one made the journey by land, so that it was only by geographical inference from the comparison of parallels of latitude that one could arrive at the conclusion that proceeding eastward from the Elbe would bring one to the Borysthenes, and the regions north of the Euxine. But who were the nations inhabiting this extensive tract, whether Bastarnæ, Iazyges, Roxolani, or other Scythian tribes, no one could say: nor whether any of these tribes extended to the northern Ocean, or there was a space beyond, uninhabitable from cold or other causes. On one point alone he was correctly informed: for he tells us that the whole country eastward from the frontiers of Germany to the Caspian was one vast plain:[2] thus discarding altogether the vague notions as to the Rhipæan Mountains in the north, which had so long lingered among Greek geographers, and which still retained a hold on popular belief down to a later period.

§ 15. It is remarkable that Strabo's acquaintance with the regions to the north and north-west of the Euxine was almost as imperfect as with those on the Baltic. Regarding Herodotus as altogether unworthy of confidence, he evidently neglected to avail himself of the interesting materials collected by that historian, and he had no means of supplying the deficiency. It would appear that the increasing pressure of the northern barbarians upon the Greek cities of the Euxine had limited their commercial relations with the interior: and though Strabo himself tells us that the campaigns of the generals of Mithridates had been the means of opening out

[1] Id. vii. 2, § 4, p. 294.

[2] ἡ γὰρ προσάρκτιας πᾶσα ἀπὸ Γερμανίας μεχρὶ τῆς Κασπίας πεδιάς ἐστιν, ἣν ἴσμεν. vii. 3, § 17, p. 306.

a more accurate knowledge of these countries, it is certain that these did not carry their arms far from the coast, and the interior seems to have remained virtually unknown. Thus he tells us that the sources of the Tanaïs, like those of the Nile, were wholly unknown:[3] and the same was the case with those of the Borysthenes, Hypanis and Tyras.[4] The Borysthenes he describes as navigable for 600 stadia,[5] and he apparently regarded it as not known any higher up. The most northerly people known to our geographer in this part were the Roxolani, who in his time dwelt between the Tanaïs and the Borysthenes, and were known in history from their having taken part in war against Diophantus, the general of Mithridates.[6] They were regarded by Strabo as a Sarmatian tribe, as were also the Iazyges; while the Bastarnæ, a powerful nation who at this time occupied the tract between the Tyras (Dniester) and the Carpathians, so as to adjoin the Germans on the west, are described as pretty nearly of German race themselves.[7]

The Tyras had formed the limits of the conquests of Mithridates on the west, which was marked by the erection of a fort at the mouth of that river bearing the name of his general Neoptolemus.[8] The Romans in the days of Strabo had not attempted to extend their power beyond the mouths of the Danube. The interval between the two was occupied by an unpeopled tract, called by Strabo "the desert of the Getæ," and which he describes as the scene of the expedition of Darius, of which Herodotus has left us so exaggerated an account. But it is difficult to adopt Strabo's suggestion literally, and suppose that the Persian king never even reached the Dniester, a distance of less than a hundred miles from the Danube.[9]

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[3] xi. 2, § 2, p. 493. He, however, justly maintains that the Tanaïs falls into the Palus Mæotis from the north; and rejects the wild hypotheses which derived it either from the east and the Caucasus, or from the far west, near the sources of the Danube (!)

[4] ii. 4, § 6, p. 107.

[5] vii. 3, § 16, p. 306.

[6] vii. 3, § 17, p. 306.

[7] Ibid.

[8] vii. 3, § 16. See Chapter XVIII. p. 84.

[9] vii. 3, § 14, p. 305. The same tract was, according to Strabo, also the scene of the expedition of Lysimachus, in which that monarch was defeated

The accurate and detailed account which Strabo gives us of the Tauric Chersonese forms a striking contrast with the vague and unsatisfactory knowledge he possessed of the countries to the north. Here he was in a land which had long been occupied by Greek colonies, to whom it had thus become known in detail. It had more recently passed under the dominion of Mithridates, and it was probably from the historians of that monarch that Strabo derived his particulars. His statement that the peninsula as a whole resembled the Peloponnesus both in form and size is more correct than such general comparisons usually are:[1] he was aware that it was really joined to the mainland only by a narrow isthmus, and has given a correct and curious account of the peculiar character of the Putrid Sea which separates it from the Palus Mæotis.[2]

§ 16. Of the Getæ or Dacians, who at this time occupied the extensive tract north of the Danube, Strabo had very little real knowledge, and the greatest part of the section devoted to this people is in fact occupied with a very unsatisfactory discussion as to the ethnographical relations of the people called by Homer Mysians, and the "illustrious mare-milking" tribes of the same poet. As already mentioned, he describes the Getæ and Dacians as two distinct nations, or at least distinct branches of the same nation, for he adds that they speak the same language, which was the case also with the Getæ and the Thracians.[3] He appears not to have noticed or comprehended the fact that the one name was originally applied to them by the Romans, the other by the Greeks. Yet he

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and taken prisoner by Dromichætes, king of the Getæ, but this may more probably be placed farther west, between the Danube and the Carpathians.

[1] ἡ δὲ μεγάλη Χερρόνησος τῇ Πελοποννήσῳ προσέοικε καὶ τὸ σχῆμα καὶ τὸ μέγεθος. vii. 4, § 5, p. 310.

[2] Ibid. § 1, p. 308. The precise agreement of Strabo's account of this curious natural feature of the country with its present condition is a striking proof that no considerable physical changes have taken place in this part of the Euxine since the time of the geographer; as a depression or elevation of a few feet would suffice entirely to change the character of the Putrid Sea.

[3] δμόγλωττοι δ' εἰσὶν οἱ Δακοὶ τοῖς Γέταις, vii. 3, § 13, p. 305. And in another passage (§ 10, p. 303) he calls the Getæ δμόγλωττον τοῖς Θρᾳξὶν ἔθνος.

recognized a similar fact with regard to the Danube, which as he points out was called by the Romans Danubius *down to the cataracts*, while below that point they adopted the Greek appellation of Ister.[4]

With regard to the regions south of the Danube, Illyricum, Pannonia and Mœsia, which as we have already seen had been lately brought under the dominion of Rome, Strabo had not much that was new to relate, though by availing himself of the results of the Roman wars and conquests in these parts, he was doubtless enabled to bring together a more complete and consistent view of these nations, than had been presented by any previous Greek writer. But their ethnological relations were then, as they have always continued to be, extremely obscure, and his notices with regard to them, though not without value, show but an imperfect insight into the subject, while he has unfortunately neglected in almost all cases to cite the authorities from whom he has derived them. In respect to the geography of this part of Europe he has correctly seized the main fact of the chain of Mount Hæmus (the Balkan) branching off from the great Illyrian ranges which descend in a continuous mass from the Alps along the east coast of the Adriatic, and extending in a line parallel with the Danube (from west to east) to the shore of the Euxine.[5] He has indeed an exaggerated notion of its importance, both in height and extent, but this was the case even with modern geographers down to a very recent period; and he justly rejects the statement of Polybius that from the summit both the Euxine and the Adriatic Seas were visible at the same time.[6]

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[4] Strabo, vii. 3, § 13, p. 304. This is the first mention in any ancient author of the cataracts or rapids, popularly known as the Iron Gates, which constitute so serious an impediment to the navigation of the Danube.

[5] vii. 5, § 1, p. 313.

[6] This had indeed been an article of the popular creed long before the time of Polybius. It was already asserted by Theopompus, and the expedition of Philip V., king of Macedonia, to the summit, was evidently originated in consequence of this belief. The detailed account of that expedition, given by Livy (xl. 21, 22), is doubtless derived from Polybius, but the Roman historian shares in the doubts so reasonably expressed by Strabo. Pomponius Mela at a later period repeats the ordinary story (ii. 2).

It is impossible to determine what

§ 17. His account of Macedonia and Thrace is preserved only in a fragmentary form, this part of his work being wanting in all the extant manuscripts, but the deficiency is in great part supplied by the two Epitomes, and it is not probable that we have lost much that is really valuable. In regard to both countries, his minute and accurate account of the portions adjoining the coasts of the Ægean contrasts strongly with his vague and general information concerning the mountain districts of the interior, and the wild tribes that inhabited them. The latter were still very imperfectly subdued, and their relations with the Romans were chiefly those of mutual hostility.[7] This portion of the Turkish Empire was even down to the present day one of the least known parts of Europe, and the same thing appears to have been the case in the time of Strabo. The geographer had however here the great advantage of the Roman military highway, the Via Egnatia, which traversed the whole country from west to east: the importance of which, with its measured distances, had been already recognized and pointed out by Polybius; from whom indeed Strabo's account of it is almost entirely derived.[8]

§ 18. Three books are devoted by Strabo to the geography of Greece and the neighbouring islands. Here of course nothing new was to be expected, while materials for the topographical description of the country could not fail to be forthcoming in profusion. Yet there is hardly any part of his work which in a geographical point of view is more unsatisfactory.

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was the particular summit actually ascended by Philip; we are told only that he marched thither from Stobi through the country of the Mædi. Leake supposes him to have selected one of the lofty group near the head waters of the Strymon, between Sofia and Kiüstendil, but the orography of this part of Turkey is still too imperfectly known to enable us to form even a plausible conjecture.

It is strange that Strabo, who shows on this occasion a very reasonable scepticism, should accept without hesitation the popular story that the rising sun was visible from the summit of Mount Athos *three hours* before it made its appearance to those at the foot of the mountain! (vii. Fr. 33, 35).

[7] The account given by Tacitus (*Annal.* iv. 46–51) of the outbreak of the Thracian tribes in A.D. 26, some years after the death of Strabo, shows how far these wild mountaineers were from being effectually reduced to subjection.

[8] Strabo, vii. 7, § 4, pp. 322, 323. See Chapter XVII. p. 27.

That tendency to digression upon mythological and poetical topics, which, as we have already pointed out, is one of the leading defects of Strabo's whole work, is here developed to the greatest extent, and has had the effect of converting all these three books into a desultory and rambling commentary upon the Homeric Catalogue of the Ships, together with some other passages of the ancient poets, rather than a systematic geographical treatise. Nor is this commentary illustrated with local details and topographical identifications, which would have had some real interest, and conveyed much information to the modern student. He had himself visited only a few points of Greece,[9] and was therefore compelled to collect his information at second hand: and unfortunately he sought this more in the works of the logographers and grammarians, than in those of the topographers and local historians. It is but justice to him to remark on the contrast which his account of Corinth—which he *had* seen—presents with the rest of this portion of his work.[1] Here his description—though not very full or detailed—is clear, intelligent and characteristic. Of Sparta and Argos on the contrary he gives us no description at all—or nothing worthy of the name—contenting himself with remarking that they were too well known to require it: and the reader would gather from his pages no idea of the striking character and natural features of the plain of Argos, or the valley of the Eurotas. Nor does he anywhere give us a clear outline of the grouping and connexion of the mountain chains, which in so remarkable a manner constitute as it were the skeleton of the Peloponnese, and determine the physical geography of the country.

One circumstance that appears to have contributed to prevent him from dwelling more fully upon the actual geography of Greece in his own time was the state of decay to which it was then reduced: a circumstance to which he recurs again

[9] Athens, Megara, and Corinth, are the only points in continental Greece, which he can be proved to have actually visited. Groskurd adds Argos, but I can see no evidence of this.

[1] viii. 6, § 21, p. 379.

and again. Even the fertile district of Messenia was in great part desolate and abandoned: Laconia retained a few towns which were tolerably flourishing, though its population had much declined: but the upland plains of Arcadia were almost wholly depopulated, the towns had ceased to exist or were lying in ruins, and even the agricultural labourers had quitted the country, leaving the fertile arable lands to support nothing but herds of cattle, horses, and asses.[2] The case was little better, if at all, with Northern Greece. Bœotia especially had never recovered from the ravages of the Mithridatic War: Thebes was reduced to a mere village,[3] and Tanagra and Thespiæ alone could still claim the appellation of towns.[4] In other passages he points out the state of depopulation and decay of Acarnania, Ætolia, Locris and the adjoining territory of the Ænianes.[5] The new colonies founded by Augustus—Nicopolis, Patræ, and Corinth—were indeed flourishing settlements, but their prosperity was to a great degree at the cost of the neighbouring districts. Such a state of things might be some excuse for not entering minutely into topographical details, but it is none for going back to the heroic ages, and wasting time in idle discussions on the obscure towns mentioned only by Homer, whose names and sites were alike unknown in the flourishing ages of Greece, as well as in the days of Strabo.[6]

This unfortunate mode of treating his subject appears to have arisen in great measure from his following the example of the writers who had composed professed commentaries upon the Homeric Catalogues, Apollodorus and Demetrius of Scepsis, rather than the authors of strictly geographical or topographical works, which were certainly not wanting in his day.[7]

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[2] viii. 8, § 1.

[3] ix. 2, § 5, p. 403. ἐξ ἐκείνου δ' ἤδη πράττοντες ἐνδεέστερον ἀεὶ μέχρι εἰς ἡμᾶς οὐδὲ κώμης ἀξιολόγου τύπον σώζουσι.

[4] Ibid. § 25, p. 410.

[5] ix. 4, § 11; x. 2, § 23.

[6] At the same time he took so little interest in tracing the remains of these extinct cities, that he does not even notice the gigantic ruins of Tiryns and Mycenæ, but adds with regard to the last that not a trace of it was visible! (viii. 6, § 10, p. 372.)

[7] The fragment of a *Description of Greece*, commonly ascribed to Dicæ-

But his blind reverence for the great poet, whom he regarded as the first and best of authorities,[8] was the original source of this defective method. Besides the two writers already cited, his principal, and by far his most valuable, authority was Ephorus, from whom he derived the greater part of his information in regard to the historical facts which he relates concerning the foundation of cities, the changes of population, &c.; much of which is really valuable and interesting.[9] But though Ephorus, like Polybius, had devoted a portion of his work to a separate and regular geographical treatise, it is remarkable that he is hardly ever cited by Strabo for any statement of a distinctly geographical character.

§ 19. In this respect indeed, strange as it may appear to us, the knowledge of Greece possessed by Strabo was scarcely less defective than that of the more western portions of Europe. Familiar as was the general notion of the Peloponnese, as resembling a leaf of the plane-tree, as well as the leading promontories and bays that determined its configuration, it will be found that its *orientation* (if the word may be allowed) was wholly erroneous: and when Strabo tells us that its length and breadth were about equal (1400 stadia in each direction), he adds that its greatest length was from Cape Malea to Ægium, and its greatest breadth from west to east from Cape Chalonatas in Elis to the Isthmus.[1] He must therefore have regarded the Isthmus as nearly, if not quite, the most eastern point of the Peloponnese, ignoring the extent to which the coast of Argolis runs out in an easterly direction to Cape Scyllæum, or rather supposing the great promontory thus formed to have a southerly instead of a south-easterly direction. The effect of this is to give to the whole map of the Pelo-

archus, whether or not it be justly attributed to that author, shows that such topographical works were in existence long before the time of Strabo, and we can hardly doubt that there were many such. (See Chapter XVI. p. 617.)

[8] See especially viii. pp. 337, 349.

[9] Besides numerous other citations, he says expressly in one passage: Ἔφορος, ᾧ τὸ πλεῖστον προσχρώμεθα διὰ τὴν περὶ ταῦτα ἐπιμέλειαν. ix. 3, § 11, p. 422.

[1] viii. 2, § 1, p. 335.

ponnese a *slew* round which greatly distorts its general appearance. At the same time this brings Cape Malea much to the west of its true position, and explains why Strabo, in measuring the length of the peninsula from north to south, drew his line from Cape Malea to the Corinthian Gulf, instead of from Cape Tænarum.

Still more erroneous was his conception of the configuration and position of Northern Greece. We have already seen that he considered Cape Sunium, the extremity of Attica, as *but little* farther north than Cape Malea,[2] so that a line drawn from thence to the Isthmus of Corinth would present but a slight curve, while a straight line (or nearly so) might be drawn from the Isthmus through the Gulf of Corinth to the straits at its entrance, and thence to the Acroceraunian Promontory.[3] This conclusion he derived from Eudoxus of Cnidus, a man (as he justly observes) of mathematical knowledge, and acquainted with the observations of latitude, as well as familiar with the countries in question; and whose authority he consequently accepts as unexceptionable.[4] That such a man should have arrived at conclusions so wide of the truth in regard to countries so well known, is indeed a striking proof how little geography could yet be regarded as based upon any sound and satisfactory foundation. Yet we shall find—as in so many similar cases—the influence of this error once introduced into systematic geography continuing to pervade the works of successive writers, and even materially affecting the Ptolemaic map of Greece.

Again, while he points out correctly the manner in which continental Greece is cut into by a succession of deep bays and inlets, so as to constitute in a manner a series of successive peninsulas, his notions of the distances between these bays and their relative position to one another, are often strangely erroneous, and it is not always easy to reconcile his statements with one another.[5]

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[2] ii. 1, § 40, p. 92.
[3] ix. 1, § 1, p. 390.
[4] Ibid. § 2, p. 391.
[5] See viii. 1, § 3. His description of Greece as constituting four successive peninsulas is in great measure

§ 20. Concerning the physical geography of Greece he gives us very little information. He notices indeed, as he could hardly fail to do, the remarkable formation of parts of Arcadia and Bœotia, and the manner in which the streams found subterranean channels, and the lakes were discharged by similar outlets, the stoppage of which from time to time gave occasion to great inundations or to the extension of the lake-waters far beyond their ordinary limits. In regard to the Lake Copaïs in particular he gives us some curious details, based apparently on good authority. He adopts also the popular notion that the river Erasinus in Argolis derived its sources from the Lake of Stymphalus,[6] and that the Alpheius and Eurotas had their origin from two fountains close together, the waters of which pursued their course for some distance underground, and then issued forth again, the one in Laconia, the other in the Pisatis.[7] Neither of these facts has been verified by modern observers, but the last is certainly not without a foundation of truth; and that the rivers of Greece frequently pursue a subterranean course for considerable distances is undoubtedly true: the same phenomenon occurs in other countries composed of similar cavernous limestones, such as Carniola and Dalmatia.

The mountains of Greece were of course familiar by name to all men of letters in the days of Strabo, whether geographers or not. But no attempt is found in his description of the country to arrange them in groups or point out the geographical relations of the different ranges. He states, in accordance with the generally received notion in his day, that Cyllene was the highest mountain in the Peloponnese, but adds that, "some said" it was 20 stadia (12,000 feet) in perpendicular height, and others only fifteen.[8] This is the only

fanciful, though his conception of the largest of these, as bounded by a line drawn from the Ambracian Gulf on the west, to the Maliac Gulf on the east, corresponds to a natural division, which has been taken as the basis in the limitation of the modern kingdom of Greece. His estimate of the width of this so-called isthmus between the two gulfs at 800 stadia (80 G. miles) is not greatly in excess of the truth; the direct distance in a straight line being just about 70 G. miles.

[6] viii. 8, § 4, p. 389.

[7] viii. 3, § 12, p. 343.

[8] viii. 8, § 1. *μέγιστον δ' ὄρος ἐν αὐτῇ Κυλλήνη· τὴν γοῦν κάθετον οἱ μὲν εἴκοσι σταδίων φασίν, οἱ δὲ ὅσον πεντεκαίδεκα.*

instance in which he attempts to give the height of any of the mountains mentioned; he does not even allude to the different estimates or alleged measurements that had been made of Mount Olympus and its neighbours Ossa and Pelion.

§ 21. Of the islands in the Ægean his account is very meagre, and their geographical positions are but obscurely indicated. They were for the most part in a state of great poverty and decay:[9] even Delos having never recovered from the blow it sustained in the Mithridatic War. His description of Crete is fuller and more interesting than usual; and he correctly points out in this instance the distinct character of the White Mountains, the most westerly group in the island, forming a ridge 300 stadia in length, and not inferior to Taygetus in height, and the isolated mass of Mount Ida, of still greater elevation, and having a circumference of not less than 600 stadia.[1] Yet we have already seen how imperfect was his notion of the position or dimensions of the island, and how erroneous and conflicting are his statements concerning its distance from the nearest points of the mainland.

The words ἐν αὐτῇ here refer to Arcadia only, but the lofty mountain group in the north-east of that region was generally regarded as the highest in the Peloponnese; no one apparently suspecting that it was exceeded in elevation by Taygetus. The real height of Cyllene, according to the French commission, is 7788 feet.

It is singular that Strabo does not refer to the more moderate estimate of Apollodorus, an author of whom he made such frequent use. (See Chapter XVI. p. 618.)

[9] The only one of which Strabo distinctly speaks from personal observation is the rocky islet of Gyaros, where he found only a fishing village, whose inhabitants were so poor that they deputed one of their number to represent to the emperor Augustus their inability to pay a tribute of 150 drachms! (Strabo, x. p. 485.) But Gyaros is one of the smallest and poorest of the islands, and when visited by Dr. Ross in 1841 had no permanent inhabitants (Ross, *Reise auf den Griechischen Inseln*, vol. ii. p. 171). Yet it was frequently used under the Roman Empire as a place of banishment or confinement for criminals. (See Juvenal, i. 73; Tacit. *Ann.* iii. 68, &c.)

[1] x. 4, § 4. According to the recent measurements of Captain Spratt, the highest summit of the White Mountains and Mount Ida are very nearly of the same height, both of them exceeding 8000 feet, and thus somewhat higher than Taygetus, which is in reality the highest mountain in the Peloponnese, but does not exceed 7900 feet.

NOTE A, p. 213.

AGE OF STRABO.

THE conclusion of Groskurd that Strabo must have been born as early as B.C. 66, rests on the assumption that he was not less than thirty-eight when he was at Corinth in B.C. 29: an argument that there is nothing to support, except the idea that his extensive travels were undertaken with a view to the composition of his geographical work, and that he was not likely to have conceived so comprehensive a plan at an early age. But this is all pure conjecture. Strabo does not tell us that he travelled with a view to his geography, but that his having seen a considerable part of the world and visited distant countries, gave him advantages for such a work. This would rather point to the opposite conclusion, that he conceived the idea of writing a geographical work *because* he had travelled, and therefore *after* his travels, and not *before*. At all events it seems inexplicable that he should have travelled for the purpose of collecting materials for his geographical work, and then on his return to Amasia devoted himself to the composition of a long and elaborate historical work, and delayed commencing the other, which had been his main object, until a period of life when he could hardly have hoped to complete it.

Clinton places his birth *not later* than B.C. 54, and is disposed to put it a few years earlier (perhaps B.C. 60, *F. H.* vol. iii. p. 553): and this is the nearest approximation we can make to its determination. He was a pupil or hearer of Tyrannion, a grammarian of Amisus (Strab. xii. p. 548), who was carried off by Lucullus to Rome; but this probably took place at Rome, not in Asia. He mentions in one passage also (Ib. p. 568) having seen P. Servilius Isauricus, the conqueror of the pirates and freebooters of Isauria and Pisidia, who died in B.C. 44, a statement that we cannot account for, but this is little to be wondered at. The old general may well have been in Asia again at a late period of his life, without our having any record of the circumstance. With regard to the date of the composition of his work (the most important point for us) we have the following data:—

1. In the fourth book (p. 206) he says that the Noricans and

Carnians were reduced to subjection by Tiberius and Drusus in one campaign, and had since then been quietly paying tribute for thirty-three years. The campaign in question took place in B.C. 15 (see Clinton, *F. H.* vol. iii. ad ann.). This passage therefore could not have been written before A.D. 18.

2. At the close of the sixth book (p. 288) he speaks of Germanicus and Drusus, the two Cæsars, as both living. As Germanicus died in A.D. 19, this passage must have been written before that date.

3. On the other hand, at the beginning of the seventh book (p. 291) he distinctly refers to the triumph of Germanicus after his victories over the Germans, in which he had avenged the defeat of Varus. This triumph was celebrated in A.D. 17 (Clinton, *F. R.* ad ann.): and therefore the passage in question must be subsequent to that date.

4. In the twelfth and thirteenth books he repeatedly notices the great earthquake which had lately (νεωστὶ) destroyed or damaged so many cities of Asia (xii. 8, p. 579; xiii. 3, p. 621; 4, p. 627). This took place, as we learn from Tacitus, in A.D. 17 (Tac. *Ann.* ii. 47): and as Strabo particularly notices the pains taken by Tiberius to restore and repair the damaged cities, these passages could not have been written till the following year (A.D. 18).

5. Again in the twelfth book (c. 1, p. 534) he tells us that Archelaus, king of Cappadocia, was recently dead, and his kingdom had been reduced to a Roman province, but its definite organization as such *was not yet known*. Now Archelaus died at Rome in A.D. 17 (Tac. *Ann.* ii. 42), but a considerable time may well be supposed to have elapsed before the details of the provincial administration were fully settled: Hence this passage also may well have been written in A.D. 18.

6. In the seventeenth book, the last of the whole work, he mentions the death of Juba II., king of Mauretania, and the succession of Ptolemæus, as a recent occurrence (xvii. 3, p. 828). The exact date of the death of Juba is uncertain: but it did not take place before A.D. 18 or 19 (see Eckhel, *D. N. V.* vol. iv. p. 157): it is therefore probable that the work of Strabo was not finished till the latter year.

All these indications point to very nearly the same period; and may be taken as proving that it could not have been completed in its present form before the year 18, and most probably was not published till the following year, A.D. 19. If we adopt Clinton's

date for the author's birth, and suppose him to have been born before B.C. 54, he must have been more than seventy-three years of age before he completed his geographical work. This advanced period of the author's life, and his residence in a remote provincial town like Amasia, must have thrown great obstacles in the way of its extensive publication: and may tend to explain the comparative neglect with which it was received by his contemporaries.

NOTE B, p. 222.

VOLCANIC ERUPTIONS—THERA AND METHONE.

The volcanic phenomena in the group of islands of which Thera (now called Santorin) is the principal, have been celebrated in all ages. The islet thrown up in the centre of the bay, to which Strabo here alludes, made its appearance in the year B.C. 186. Another similar eruption took place in the lifetime of the geographer (A.D. 19) though probably after the date at which this passage was written. Other outbreaks have taken place at intervals, down to our own time, the last having occurred as recently as 1866. A full account of them will be found in Lyell's *Principles of Geology* (vol. ii. pp. 65–73, 10th edit.).

One of the other instances cited by Strabo has received less attention than it deserves. "Near Methone on the Hermionic Gulf (he tells us, i. 3, § 18, p. 59) a mountain seven stadia in height was thrown up, after a violent fiery eruption; it was unapproachable by day on account of the heat and the smell of sulphur, but at night there was no bad smell, but a bright light and great heat, so that the sea around was boiling for a distance of five stadia, and turbid for not less than twenty stadia. The shore was piled up with huge fragments of rocks as large as towers." This was evidently the same eruption referred to by Pausanias (ii. 34, § 1) as having occurred in the reign of Antigonus the son of Demetrius (B.C. 277–239), so that it must have been described by competent observers. The whole peninsula of Methone (or Methana, as it is more commonly called) is clearly of volcanic origin, but this is the only recorded instance of volcanic action, within the historical period.

NOTE C, p. 259.

DISTANCES GIVEN BY THE CHOROGRAPHER.

The chorographer reckoned Corsica as 160 Roman miles in length and 70 in breadth: and Sardinia as 220 miles long by 98 broad. (Strab. p. 224.) The measurements of modern geographers give to the former island 116 English miles (124 Roman) by 51 in its greatest breadth: while Sardinia measures about 140 G. miles by 60, or 175 Roman miles by 75. The distances given by the chorographer are therefore largely in excess: but this is still more the case with his statement that the shortest interval from the African coast to Sardinia amounted to 300 miles, an estimate more than double the truth, as the southernmost point of Sardinia, Cape Spartivento, is really little more than 100 G. miles or 125 Roman miles from Cape Serrat in Africa. So enormous an error, in regard to a distance that might be supposed so well known, is very difficult to account for. Some of the editors of Strabo have proposed to read 200 for 300, which would accord with the estimate of Pliny (*H. N.* iii. 13, § 84), but in any case the distance is greatly over-stated: and it is hazardous to make such arbitrary changes without authority. It may be added that the distances cited by Strabo from the chorographer do not in general agree with those of Pliny.

CHAPTER XXII.

STRABO.

SECTION 1.—*Asia.*

§ 1. WITH the eleventh book Strabo commences the description of Asia, which occupies the whole of the following six books. Throughout this part of his work he in general follows Eratosthenes very closely, having adopted, as we have seen, all his leading conclusions in regard to the configuration of that great continent. Thus he begins with assuming that the chain of Mount Taurus traverses it continuously from west to east, preserving approximately the same latitude and direction from Lycia and the Rhodian Peræa, where it abuts upon the Ægean, to its eastern termination in the Indian Ocean. But as he assigns to this range or mountain belt a width in many places of as much as 3000 stadia, it cannot of course be considered as a mere chain of mountains, but comprises within its own extent various tribes and nations, some of them obscure and insignificant, others of considerable importance, such as the Armenians, Medians, &c. He then proceeds to describe the various nations of Asia, according to their position with reference to this great mountain barrier, dividing them into those *within* the Taurus, according to the phrase in use among the Greeks,[1] that is to the north of the chain, and those without, or to the south of it. Those nations that, as just pointed out,

[1] ii. 5, § 31, p. 129. Strabo himself refers to the phrase as one in general use (ἃ δὴ καὶ ἐντὸς τοῦ Ταύρου καλοῦσιν, xi. 12, § 1), rather than of his own selection. It is evident that it must have originated with the Greeks at an early period, with reference to the nations of Asia Minor, who were limited to the south by the range of the Taurus, properly so called. When this appellation came to be extended by geographers (as it was by Eratosthenes and Strabo) to a great mountain chain traversing the whole length of Asia, the expression became singularly inappropriate.

lay wholly, or in great part, within the limits of the mountain tract, he classes with the northern or southern group according to their proximity and connection with the one or the other.

Northern Asia, or Asia north of the Taurus, he considers as naturally divided into four portions: first the countries bordering on the Tanaïs (which he assumes as the boundary between Europe and Asia) and extending from thence to the Caspian Sea, and the isthmus that separates the latter from the Euxine: secondly, the regions extending eastward from the Caspian to the Scythians, who adjoined the Indians to the north; thirdly the nations that extended from the isthmus already spoken of to the Caspiæ Pylæ and the range of Mount Taurus, on the one hand, and to the Halys on the other, thus comprising the Medians, Armenians, Cappadocians and neighbouring tribes: and lastly the country now called Asia Minor, extending westward from the Halys to the Ægean, and forming a kind of peninsula bounded by the isthmus between the Cilician Gulf and the Euxine.

The portion of Asia south of the Taurus comprised India, Ariana (a term which he uses in its widest sense), Persia, and all the nations that extend from the Persian to the Arabian Gulf, the Nile, and the part of the Mediterranean adjoining Egypt and Syria. Under this general appellation he includes Assyria, Babylonia, Mesopotamia, Syria and Arabia.

§ 2. Beginning with the Tanaïs he tells us that that river flowed from north to south, but was not, as commonly supposed, diametrically opposite to the Nile (*i. e.* on the same meridian with it), but farther to the east.[2] Like the Nile, its sources were unknown, but while the course of the latter river was known for a long distance, the Tanaïs was known only for a short way above its mouth, on account of the cold, and the natural difficulties of the country, and still more of the obstacles opposed by the wild and nomad nations that occupied its

[2] φέρεται μὲν οὖν ἀπὸ τῶν ἀρκτικῶν μερῶν, οὐ μὴν ὡς ἂν κατὰ διάμετρον ἀντιρροῦς τῷ Νείλῳ, καθάπερ νομίζουσιν οἱ πολλοί, ἀλλὰ ἑωθινώτερος ἐκείνου, xi. 2, § 2.

banks. On account of this uncertainty, some writers supposed it to have its sources in the Caucasus, and then to make a great bend round, so as to fall into the Palus Mæotis from the north. Others still more absurdly connected it with the Ister. Strabo justly rejects all these suggestions, and regards it as probable that it came from sources in the north and at no great distance.[3] The Palus Mæotis he considered, in common with most other geographers, to have its principal length from north to south, so that the direct course of navigation from the strait at its entrance (the Cimmerian Bosporus) to the mouth of the Tanaïs, would be from south to north. Its length in this direction he estimates at 2200 stadia.[4]

Of the nations north of the Palus Mæotis he appears to have had no knowledge at all, and only tells us in a vague and general way that the northern regions towards the Ocean were inhabited by Scythian tribes, of nomad habits and dwelling in waggons. South of these were the Sarmatians (also a Scythian tribe),[5] and between these and the Caucasus the Aorsi and the Siraci, partly nomads, and partly agricultural: besides which the Aorsi carried on a considerable trade, bringing Indian and Babylonian wares, which they received from the Armenians and Medians, and transported on the backs of camels from the Caspian to the Palus Mæotis. By this means they had amassed considerable wealth, and wore ornaments of gold.[6]

Strabo's account of the Greek settlements on the Asiatic side of the Cimmerian Bosporus—Phanagoria, Corocondame, Hermonassa, &c., is unusually minute and precise, and his detailed enumeration of the petty tribes in the vicinity has

[3] xi. 2, § 2.

[4] Ibid. § 3. This is a very moderate estimate—the real length being about 160 G. miles, or 1600 stadia—and presents a remarkable contrast with the exaggerated notions generally current concerning the vast extent of the Palus Mæotis.

[5] *ἐνδοτέρω δὲ τούτων Σαρμάται, καὶ οὗτοι Σκύθαι.* Ibid. § 1, p. 492. It would be hasty to draw any *ethnological* inference from these words. Strabo is probably here using the term "Scythians" in the vague and general sense in which, as he himself tells us, it was often employed by the Greeks to designate all the nomad nations of Northern Asia.

[6] xi. 5, § 8, p. 506.

the air of being derived from good information. This was also the case, as we have already remarked,[7] with his description of the Tauric Chersonese. Unfortunately he does not in either case indicate the authority from which his materials are derived.

§ 3. It is otherwise with his account of the Caucasian tribes inhabiting the eastern coast of the Euxine, from the Greek colonies last spoken of to Dioscurias and the mouth of the Phasis. Here he distinctly refers to the historians of the Mithridatic wars as furnishing the most recent and accurate information.[8] We have already pointed out how remarkable a military exploit that prince had accomplished in conducting his army through so rugged and difficult a country, peopled by such wild tribes: and we cannot wonder that it should have attracted so much attention among Greek writers. But this passage had naturally produced no permanent effect upon the inhabitants of this coast, who were never really reduced to subjection by the Romans, and continued in the time of Strabo to carry on piratical expeditions with light barks, with which they scoured the coast of the Euxine, and committed great depredations.[9] The nations he places in order along the coast, proceeding eastward from Sindica (the name under which he comprises the tract extending from the Cimmerian Bosporus to Gorgippia), are the Achæi, Zygi and Heniochi, the last of whom adjoined the Colchians, who occupied the rich and fertile lands on the banks of the Phasis. The broad valley of that river formed even in those days one of the chief natural highways into the heart of Asia, and the nations occupying the broad tract of comparatively level and fertile country extending from thence to the Caspian—the Iberians and Albanians—were far more advanced in civilization than their neighbours on either side. The Iberians in particular, who inhabited a considerable part of the modern Georgia, are described as a settled agricultural people, with towns and

[7] See above, p. 263. [8] Strabo, xi. 2, § 14, p. 497. [9] Ibid. § 12.

villages, houses with tiled roofs, and some pretension to architectural effect, and possessing also an organized political constitution.[1] The Albanians, farther east, between the Iberians and the Caspian, were more devoted to pastoral occupations, and partook in some degree of a nomad character, but were a tranquil and peaceable people, presenting a great contrast to the wild and fierce tribes of the mountain districts.[2]

These three nations, the Colchians, Iberians and Albanians, occupied what Strabo regards as the isthmus between the Euxine and the Caspian. The width of this intervening tract had indeed been greatly underrated by earlier geographers, thus giving it much more the character of an isthmus than it really possessed, and even Posidonius had estimated it at only 1500 stadia from sea to sea.[3] Strabo on the contrary, though he continues to designate it as an isthmus, assigns it a breadth of 3000 stadia, and even this is considerably below the truth.[4] It is probable that he had more accurate information concerning these regions, in addition to the historians already cited, from the circumstance that Moaphernes, who was his mother's uncle, had held the government of Colchis under Mithridates the Great.[5] That monarch derived from thence the greater part of the timber which he required for building his fleets. In addition to this Colchis furnished flax, hemp, and pitch in abundance, as well as all kinds of fruit, while the numerous rivers by which it was traversed afforded every facility for conveying its produce to the coast. Strabo indeed appears to have been fully alive to the richness and natural impor-

[1] xi. 3, § 1.
[2] xi. 4, § 1.
[3] Posidon. ap. Strab. xi. 1, § 5, p. 491. He even compared it with the isthmus from Pelusium to the Red Sea; and added that he believed it was much about the same distance from the Mæotis to the Ocean.
[4] Strabo, *ibid.* The direct distance from the mouth of the Phasis to the Caspian near the mouth of the Cyrus is about 380 G. miles, or 3800 stadia. The actual shortest line as measured on the map from sea to sea does not exceed the 3000 stadia given by Strabo; but as such a line crosses the chain of the Caucasus obliquely, it could never have suggested the idea of an isthmus; and Strabo himself tells us that his statement refers to the distance from the mouth of one river to the other. This is indeed the only line by which it is practicable to pass from sea to sea.
[5] xi. 2, § 18, p. 499.

tance of this country—one of the fairest regions of the world—though in modern times so little known until a very recent period.[6]

§ 4. Of the mountain chain of the Caucasus itself he gives a clear and unusually full account. He justly describes it as extending like a wall across the isthmus which separates the Euxine from the Caspian, and impending over the eastern coast of the former sea through its whole extent from the confines of Sindica to Dioscurias. At the same time it throws out offshoots of a lower elevation, by means of which it is connected with the mountains of the Moschi, and through them with the Armenian mountains, and the ranges that belong to the system of the Taurus. The lower ranges and slopes of the Caucasus were covered with extensive forests, inhabited by mountain tribes, who subsisted principally on game, wild fruits, and milk. The higher summits were covered with snow and ice, and inaccessible in winter, but in summer the inhabitants ascended them, wearing broad snow-shoes of raw hide furnished with spikes, and brought down their burdens from thence, by sliding down on hides. As one descended the slope to the north, the climate became less severe, notwithstanding the more northern latitude, on account of its proximity to the great plain of the Siraci.[7] In another passage he describes particularly the pass leading into Iberia from the northern nomad nations:[8] evidently the same as that now called the Pass of Dariel, which is indeed the only practicable pass across the whole range, and must therefore, though presenting great natural difficulties, have been more or less frequented in all ages. It was, he says, a steep and difficult ascent for three days (coming from the north) and after that a narrow pass for four days' journey along the valley of the Aragus, so narrow as only to allow one person to pass at a time and guarded at its entrance by a very strong fortress. The river

[6] No mention is found of gold among the productions of Colchis, notwithstanding its supposed connection with the fables of the golden fleece.

[7] xi. 5, §§ 6, 7, p. 506.

[8] Ib. 3, § 5, p. 500.

Aragus still preserves the name Aragwa, and Strabo's acquaintance with the name of this unimportant stream, as well as with other minor tributaries of the Cyrus, shows the accuracy of his information.[9] In describing the Cyrus itself and the Araxes as flowing into the Caspian by separate mouths, it is not unlikely that his statement was correct, though the Araxes now joins the Cyrus more than 70 miles from its mouth.[1] But the whole of this country is a swampy delta, and the alluvial accretions of land proceed with such rapidity that great changes may have taken place since the time of Strabo.

Dioscurias, which he, in common with almost all other ancient geographers, regarded as the easternmost point of the Euxine,[2] was a considerable emporium of trade, and resorted to by all the neighbouring nations, who even in those days spoke so great a variety of languages and dialects, that it was said not less than seventy distinct languages were spoken there.[3] The trade with the interior of Asia was carried from the mouth of the Phasis, where there was a city of the same name, up the river by water as far as a fort called Sarapana, from whence it was four days' journey overland, by a road practicable for vehicles, to the Cyrus.[4] The pass of Suram across the watershed uniting the two mountain systems of the Caucasus and the opposite range is indeed one of very moderate elevation, and presenting little natural difficulty.

Strabo deservedly rejects the appellation of Caucasus given by the Macedonian soldiers to the lofty range of the Hindoo Koosh, between Bactria and India, and ascribes it to the desire of flattering Alexander by associating his conquests with the name of the mountain chain that had the reputation of being the loftiest in the world, and was celebrated in the Greek fables in connection with Prometheus.[5]

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[9] xi. 3, § 2.

[1] Ib. 4, § 2. Strabo himself notices the great amount of alluvium brought down by the river Cyrus.

[2] xi. 2, § 16, p. 497. See Chapter XVI. p. 636.

[3] Ibid. p. 498. Some even increased the number to three hundred! Pliny ascribes this last statement to Timosthenes. (Plin. *H. N.* vi. 5, § 15.)

[4] Ibid. § 17, p. 498.

[5] xi. 5, § 5, p. 505.

§ 5. With regard to the Caspian he shared, as we have already seen, in the opinion of Eratosthenes, and all other geographers since the time of Herodotus, that it was an inlet from the northern ocean, similar to the Persian Gulf on the south. So clearly indeed was this idea fixed in his mind that he describes the sea and the nations on its banks, as they would present themselves *to a person sailing in from the north.*[6] At first he tells us the gulf is rather narrow, but afterwards widens out as one advances, until in its innermost (i. e. southern) portion, it is about 5000 stadia in width. The length from the entrance to the inmost bight is much about the same,[7] but slightly more. These dimensions he has probably taken from Eratosthenes: he expressly cites that author as his authority for the distances around the shores of the Caspian to the mouth of the Oxus and from thence to that of the Iaxartes.[8] Patrocles was evidently the original source from which both derived their information,[9] as he was also for the statement advanced with confidence by Strabo as well as Eratosthenes that both the Oxus and Iaxartes fell into the Caspian Sea, after pursuing separate courses from their sources to their mouths.[1] It does not appear that Strabo had any further information concerning these regions than what he derived from these earlier geographers, with the exception of some particulars respecting Hyrcania which he cites from Apollodorus of Artemita. He was indebted to this writer especially for clear notions respecting the river Ochus, which

[6] xi. 6, § 2, p. 507.

[7] Ib. § 1. The breadth is greatly exaggerated—that of the southern portion of the Caspian being really less than 240 G. miles: while the length is in reality nearly three times the breadth. Strabo himself adds, after citing the statements of Eratosthenes, that allowance must be made for considerable vagueness in regard to regions so little known, especially in respect to distances (*δεῖ δὲ περὶ τῶν ἐν τῇ μερίδι ταύτῃ καὶ τοῖς ἐπὶ τοσοῦτον ἐκτετοπισμένοις ἁπλούστερον ἀκούειν, καὶ μάλιστα περὶ τῶν διαστημάτων*). He had in reality much greater reason than he was aware of, for this caution.

[8] See note to Chapter XVI. p. 644.

[9] He is cited by Strabo (xi. 7, § 1, p. 508) as describing the Caspian as just about equal in size to the Euxine, which, as a rough approximation, is a correct estimate.

[1] xi. 7, § 4, p. 510; 11, § 5, p. 518. *ὁ μέντοι Ἰαξάρτης ἀπ' ἀρχῆς μέχρι τέλους ἕτερός ἐστι τοῦ Ὤξου καὶ εἰς μὲν τὴν αὐτὴν τελευτῶν θάλατταν, αἱ δ' ἐμβολαὶ διέχουσιν ἀλλήλων, ὥς φησι Πατροκλῆς, παρασάγγας ὡς ὀγδοήκοντα.*

had been ignored by previous geographers or supposed to be a mere tributary of the Oxus, but according to Strabo had a distinct course and fell into the Caspian by a separate mouth.[2]

§ 6. Proceeding eastward from Hyrcania and the south-east corner of the Caspian, Strabo tells us that one still has the chain of Taurus on the right hand, which forms a continuous range from Armenia to this point, and is known generally by the native name of Parachoathras. It was not till after passing the land of the Arians that the great chain assumed the name of Paropamisus, while it was erroneously termed by the Macedonians the Caucasus. It was this same chain which was prolonged without interruption to the Indian Ocean, though known by different names, as the Emoda, Imaus, &c.[3]

On the left or towards the north, were situated the Daæ, nearest to the Caspian Sea, and beyond them the Massagetæ and Sacæ. All these nations are included by Strabo under the general name of Scythians,[4] though as he justly observes the earlier Greek writers only gave this name to the European Scythians and those adjoining the Tanaïs and Palus Mæotis, and distinguished the Asiatic nomad tribes as the Massagetæ and Sacæ. Hence we find these names occurring as those of nations with which Cyrus made war on his extreme frontier. The Iaxartes was the boundary which separated the Sacæ, or nomad nations included under that name, from the Sogdians, who as well as the Bactrians, were a comparatively civilized people, even before they had shared in the Greek civilization introduced by the Bactrian kings. That monarchy had been already overthrown before the time of Strabo, and he distinctly tells us that the barbarians who had wrested the fertile provinces of the Bactrians and Sogdians from their Hellenic rulers were tribes from beyond the Iaxartes, to which he gives the

[2] xi. 7, p. 509. The Ochus of Artemidorus may be certainly identified with the modern Attrek; the course of which was even in modern times, until quite recently, as imperfectly known as that of the Ochus among the ancients.

[3] xi. 8, p. 511.

[4] xi. 8, § 2, p. 511.

names of Asii, Pasiani, Tochari, and Sacarauli, but apparently includes them all under the general term of Sacæ.[5] The name of Sacæ or Sakas was in fact the Persian appellation for the nomad nations on their northern frontier,[6] and doubtless applied with as little regard to their ethnic affinities or subdivisions as was that of Scythians by the Greeks, or Tartars in modern times.

§ 7. Of the countries south of the Iaxartes, Sogdiana, Bactriana, Aria and Margiana, Strabo gives but a brief account, and appears to have known very little, if at all, more than what he learned from Eratosthenes and the historians of Alexander. He has indeed given us a few interesting historical particulars concerning the growth and extension of the Greek kingdom of Bactria, which at one time extended over a considerable part of the north-west of India, down even to the mouths of the Indus, while they carried their arms eastward as far as the Seres and Phryni.[7] This notice is taken from Apollodorus of Artemita, and is therefore the first mention of the Seres in any ancient writer.[8] But Strabo evidently did not see its importance, as he brings it in merely in passing. It is curious indeed that although the use of silk was, as we have seen, already familiar to the Romans in his day, and the *name* at least of the Seres was well known to them, he never alludes to their existence, except in this incidental manner, nor does he even mention the trade in silk, which must have already assumed considerable importance.[9] He had certainly no idea

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[5] xi. 8, § 2, p. 511. This event took place about B.C. 126, though the exact date cannot be fixed. The only other writer who mentions it is Trogus Pompeius, of whom unfortunately only the epitome is preserved. He terms the Scythian nations who occupied Bactria and Sogdiana, Sarancæ, and Asiani (Prolog. lib. xli.); but in another passage mentions also the Thocari or Tochari. (lb. xlii.)

[6] This we are distinctly told by Herodotus (vii. 64, *οἱ γὰρ Πέρσαι πάντας τοὺς Σκύθας καλέουσι Σάκας*), and his statement is fully confirmed by the Persian inscriptions. (See Rawlinson's note, on the passage.)

[7] xi. 11, § 1, p. 516.

[8] Concerning the age of Apollodorus, see Chapter XX. p. 162.

[9] In the only passage (p. 694) where he mentions the *Σηρικά*—a kind of woven stuffs (*ὑφάσματα*) made of a sort of thread scraped from the bark of trees (*ἐκ τινων φλοιῶν ξαινομένης βύσσου*—he regards them as an Indian product, analogous to cotton. But this passage is taken from Nearchus; and the mention of the Seres as one of the most long-lived of the Indian tribes, attain-

of their real geographical position, and supposed them to be merely a nomad race of Scythians.

The north of Asia, as well as the regions east of Sogdiana, was indeed, as he expressly tells us,[1] a mere blank to him: and it was only by conjecture that he inferred them to be occupied by nomad nations, resembling the Scythians in their habits of life. It was not certain, though alleged by some, that the sea extending around from India to the Caspian had ever been navigated, though it was believed, on the authority of Patrocles, to be possible.[2]

§ 8. It seems to have been also in his day a received conclusion in geography,[3] though in fact resting upon mere conjecture, that the great mountain chain which traversed the whole continent of Asia from west to east, and was called Imaus in its easternmost continuation, ended in the Indian Ocean without projecting in any material degree beyond the rest of India. From the promontory thus formed (to which he gives the name of Tamarus, adopted from Eratosthenes), which separated India from Scythia, the coast towards the north trended rapidly away, so that this portion of Asia assumed something of a pyramidal form, having the vertex at the promontory already mentioned.

It is singular that a notion so utterly devoid of foundation should have assumed so consistent and definite a form. It is almost more singular to find a geographer like Strabo, though admitting his entire ignorance of this part of Asia, proceeding to define its length and breadth; the former of which along the chain of the Taurus from the Caspian Sea to the Indian Ocean he determines to be about 30,000 stadia, or 3000 G. miles, while the breadth was less than ten thousand stadia.[4]

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ing the age of more than 200 years (pp. 701, 702), is derived from Onesicritus, and cannot be regarded as showing any real acquaintance with the nation bearing that name.

[1] xi. 11, § 6, p. 518.

[2] *οὐχ ὁμολογοῦσι δὲ, ὅτι περιέπλευσάν τινες ἀπὸ τῆς Ἰνδικῆς ἐπὶ τὴν Ὑρκανίαν, ὅτι δὲ δυνατὸν, Πατροκλῆς εἴρηκε*, xi. 11, § 6, p. 518. Pliny and other later writers, as we shall see, asserted that the passage had been actually made.

[3] Ibid. § 7, p. 519.

[4] Ibid. p. 519.

It is unnecessary to point out that these conclusions are mere inferences, based upon the *assumed* length and breadth of the whole continent and other assumptions equally unfounded.

§ 9. Returning from these little known regions towards the west, Strabo proceeds to describe two countries—Armenia and Media—which he considers as situated rather *in* the range of Mount Taurus than either to the north or south of it, being so intersected and encircled by the various ramifications of that great chain that they could not be assigned to the group of nations on either side of it.[5] Armenia especially he correctly describes as being almost entirely a land of mountains and high-table-lands,[6] which contained the sources of several great rivers, especially the Euphrates and the Tigris, and the Araxes towards the Caspian, as well as others of minor importance which flowed to the Euxine Sea.

On this occasion he gives a general outline of the direction and conformation of the chain of Taurus and its subsidiary ranges, which shows a considerable acquaintance with the orography of this part of Asia.[7] Mount Taurus (he tells us) takes its rise in Caria and Lycia, but does not at first attain any considerable height or breadth. It first rises to a great elevation opposite the Chelidonian islets on the frontiers of Lycia and Pamphylia,[8] and from thence extends eastwards to the north of Cilicia, a great part of that country being formed by the valleys intercepted between the offshoots of the great mountain range. Beyond that it throws off two great arms or branches, the one called Anti-Taurus, towards Cappadocia and Armenia Minor, the other, Amanus, towards the south, extending to Syria and the Euphrates. The main chain itself, though cut through by the Euphrates, is continuous with the

[5] xi. 12, § 1, p. 520.
[6] ὀροπέδια, xi. 14, § 4, p. 528.
[7] xi. 12, §§ 2–4.
[8] On this account many writers considered that the headland opposite to these islands was the beginning of the chain of Taurus, but Strabo properly points out that the mountain ridge which separated Lycia from the districts of the interior (the Cibyratica) was in fact a continuation of the Taurus, which was thus prolonged into the Rhodian Peræa, and might be considered as ending in the mountain promontories opposite to Rhodes (xiv. 2, § 1; 3, § 8).

mountains of Armenia on the other side of that river, and it is here that it rises into a great mountain mass, sending out offshoots in different directions, known by the name of Paryadres, and other local appellations, and forming the boundary of Armenia on the side of the Iberians and Albanians. From this great central mass was continued another chain towards the east, known by the name of Parachoathras, bordering on the Caspian Sea and extending through Media Atropatene and the Greater Media to the Caspian Gates, whence it was continued still farther east along the confines of Aria. It was this east and west prolongation of the chain that was regarded by Greek geographers from Eratosthenes to Strabo as the true continuation of the Taurus, which served to connect it with the great ranges of the Paropamisus or the Hindoo Koosh. But besides this there were several subsidiary ranges to the south of the Euphrates in its upper course, and it was to the most elevated portion of these that the Greeks gave the name of Niphates, in which according to Strabo the Tigris took its rise.[9] From thence there branched off towards the south another great ridge called Zagrium or Zagros, extending a long way, and forming the separation between Media on the one hand and Assyria and Babylonia on the other, till it joined on to the mountain ranges of Susiana and Persia.

§ 10. In connection with this subject Strabo gives an account of the course of the Euphrates and Tigris, both of which rivers, as he correctly tells us, rose in the mountains of Armenia.[1] The lower part of their courses, where they encompassed Mesopotamia, had long been familiar to the Greeks, and even the upper part of that of the Euphrates was well known to Strabo, who correctly describes it as rising in the northern portion of the Taurus, and flowing in the first place from east to west through the Greater Armenia to the frontiers of the Lesser: then separating that province from Acilisene and making a sudden turn to the south where it reached the

[9] xi. 12, § 4.

[1] Ibid. 12, § 3; 14, § 2.

confines of Cappadocia; thenceforward leaving Cappadocia and Commagene on the right, and Acilisene and Sophene on the left, till it issued into the plains of Syria, and took another great bend towards Babylonia and the Persian Gulf. In this description Strabo clearly had in view only the northern branch of the Euphrates—that which flows near Erzeroum, and has its sources in the mountains not far from that city. It is this river which alone was regarded both by Greek and Roman writers as the true Euphrates, and which is still distinguished by the name of Frat. The southern arm or affluent, called at the present day the Murad Tchai, which is considered by modern geographers, as well as by native Armenian writers, as one of the main sources of the Euphrates, and is in fact the larger river of the two, was treated by ancient geographers as a mere tributary, and is not even noticed by Strabo in describing the geography of Armenia.[2]

The Tigris he describes as rising in the southern slopes of Mount Taurus, and says that its sources were distant from those of the Euphrates about 2500 stadia. This river also rises from two different and distant sources, forming two different arms, which, after holding separate courses, unite between Diarbekr and Mosul. But there seems no doubt that Strabo regarded as the main source of the Tigris the stream that rises in Mount Niphates, and flows from thence due south until it joins the river of Diarbekr.[3] From the terms in which he speaks, both here and elsewhere, of the outflow of the two

[2] It was, however, in all probability this river, which under the name of Arsanias had acquired celebrity in the Mithridatic Wars by the defeat of Tigranes on its banks by Lucullus (Plut. *Lucull.* 31), and which figures again in the wars of the Romans with the Armenian kings (Tacit. *Annal.* xv. 15). It is described by Pliny as a tributary of the Euphrates (Plin. *H. N.* v. 24, § 84). It is also, as has been already observed, the river to which Xenophon gives the name of Euphrates. (See Chapter X. p. 355.)

[3] He has elsewhere a strange story of the Tigris flowing *through* the Lake Arsene (the Lake of Van) without mingling its waters, which fell into a great chasm at one end of the lake, and after flowing for a long distance underground, reappeared in the district of Chalonitis (xi. p. 529). The last addition is utterly unintelligible, the district known as Chalonitis being far away in the eastern part of Assyria, at the foot of Mount Zagros. There is probably some mistake in the name.

great rivers into the Persian Gulf, it is clear that each of them in his day had still its separate outlet to the sea, instead of uniting their streams into one as they do at the present day.[4]

§ 11. Armenia had, as we have already seen, been first opened out to the knowledge of geographers by the campaigns of Lucullus and Pompey in the Mithridatic Wars, while the expedition of M. Antony against the Parthians had first made them acquainted with Media Atropatene or Azerbijan. Strabo availed himself of the materials thus furnished him, and there was probably no part of Asia of which his knowledge was more in advance of that of Eratosthenes. But the rugged and mountainous character of the two countries, and the intricate and complicated relations of the mountain chains by which they are traversed, opposed great difficulties to an accurate geographical knowledge of them—and Strabo's information was still very imperfect. Thus we find him describing three lakes, one to which he gives the name of Spauta,[5] in Media Atropatene, remarkable for its excessive saltness; the other two, which he calls Mantiane and Arsene or Thopitis in Armenia. Both of these had also salt or brackish water, the former especially, which he calls the largest lake next to the Mæotis, and which had salt-works on its shores. There are in fact only two lakes to which his description can possibly apply:[6] the Lake of Van, which is that called by him Arsene or Thopitis—it is the Arsissa of Pliny and Ptolemy—and the

[4] It may, however, be questioned whether he is not here simply following Eratosthenes, without enquiry as to what changes might have taken place in the interval.

[5] It is a very plausible suggestion of M. St. Martin (*Mém. sur l'Arménie*), and the recent editors of Strabo, that this name, which is written Σπαῦτα in all our MSS., should really be Καπαῦτα, and is a corruption of the Armenian name Kapotan, signifying the *blue* lake. Strabo himself tells us that this was the signification of the Armenian name (κυανῆ ἑρμηνευθεῖσα), though he erroneously connects this interpretation with the name Μαντιανή, which has no such meaning. (See Kramer's note, *ad loc.*) The Lake of Urumiah, also called Shahi, which is without a doubt the lake meant by Strabo, is remarkable at the present day for its excessive saltness. According to Col. Monteith (*Journal of Geogr. Soc.* vol. iii. p. 56) it contains nearly twice as much salt as the sea.

[6] There is indeed a third lake, in the north of Armenia, of considerable size, now called the Lake Goukcha, but this is out of the question, as its waters are perfectly fresh and consequently abound in fish. (See Col. Monteith, *l.c.* p. 41.)

Lake of Urumiah on the borders of Armenia and Atropatene, which is clearly the one that he describes under the name of Spauta in the one country, and of Mantiana in the other.[7] Such a confusion might easily arise in writing from different materials, but it shows how far he was still removed from possessing a correct geographical idea of the countries in question.

In other respects his account of Armenia and the neighbouring province of Atropatene is generally accurate enough; and he had a clear knowledge of the topographical relations of the various provinces and districts into which Armenia was divided, or by which it was surrounded; though modern geographers have much difficulty in determining their position and extent. Of the greater Media, or the country generally known by that name, he treats in connection with Media Atropatene, although in a geographical point of view it would certainly have been more properly classed with the provinces of the Persian Empire south of the Taurus. His geographical account of this province is brief and summary, and we perceive immediately that he had here no recent sources of information, and was forced to fall back entirely upon Eratosthenes and other authorities of the Macedonian period. Media, indeed, was in all times a country imperfectly known, and its boundaries seem never to have been very accurately defined. Strabo's own account is by no means clear,[8] and there can be little doubt that the relations and limits of the mountain tribes, that were by some regarded as belonging to Media, by others to the adjoining provinces, were in reality subject to frequent changes. The mountaineers of the lofty ranges of Zagros were evidently as little really subject to the Persian or Macedonian rulers, as the Koords of the present

[7] Strabo, xi. 13, § 2; 14, § 8. In point of fact every one of these lakes is known at the present day by at least two different names.

[8] He tells us (xi. 13, § 6) that Media was bounded on the east by Parthia and the mountains of the Cossæans. But the Cossæans, according to his own account, as well as that of other writers, inhabited the ranges of Mount Zagros, on the west of Media, and adjoining the district of Elymaïs; nor have we any trace of the existence of such a people farther east.

day to the Turks or Persians. The Cossæans in particular were in the habit of levying tribute from the Persian kings, when they moved with their court from Babylonia to Ecbatana, their usual residence in summer.[9] But according to Strabo Media might be properly considered as extending from the pass called the Median Gate, leading from Ecbatana into Babylonia, on the west, to the Caspian Gates on the east; a distance which he estimates at 4100 stadia.[1] He justly describes it as a cold and upland country, almost entirely mountainous, with the exception of the portion near the Caspian Gates—the environs of the modern Teheran—which was a fertile and productive plain. Even in the mountain districts also there were some fertile valleys, and both Media and Armenia were renowned for their breed of horses, vast numbers of which were reared in both countries, and furnished annually as tribute to the Persian kings.

§ 12. Strabo now returns nearer home, and his twelfth book is occupied with the description of Cappadocia and Pontus, and the northern provinces of Asia Minor, along the coast of the Euxine. Here he derived great advantages from the proximity of these countries to his native city: and he had himself travelled through a considerable part of the interior. Unfortunately he has not thought fit to record the extent or course of his travels, but as he distinctly tells us that he had visited in person the Cappadocian Comana,[2] which was situated quite in the interior, in the upper valley of the Sarus, he must have traversed a considerable portion of that province. It is not unlikely that he returned to his native city by this route,

[9] Strabo, *l. c.*

[1] This is greatly over-estimated, though probably taken from Apollodorus of Artemita, the historian of the Parthian Wars, whom he cites elsewhere (xi. p. 519), for the total distance from his native city to the Caspian, which he estimated, still more erroneously at 8000 stadia. As Artemita lay on the high road from Seleucia to Ecbatana, it is strange that Apollodorus should not have been better informed.

The pass across Mount Zagros, to which he gives the name of Median Gate (Μηδικὴ πύλη, xi. 13, § 8), is clearly that leading from Hamadan by Kermanshah to Bagdad, which must in all ages have formed one of the principal passes across the great mountain chain.

[2] xii. 2, § 3, p. 535.

across Cilicia and Cappadocia from Tarsus to Amasia. His description of Mazaca (better known by its later name of Cæsarea) at the foot of Mount Argæus, and his information concerning the ascent of that mountain, also point apparently to the result of a personal examination.[3] The general character that he gives of the country as an open upland tract, almost wholly bare of wood, but not devoid of fertility, and producing abundance of corn, as well as supporting immense quantities of sheep and an excellent breed of horses, is fully confirmed by the descriptions of recent travellers. He notices also various mineral productions of the country, the most important of which was the red earth, commonly known as the Sinopic, from its being exported from that city, but which was really found in Cappadocia.[4] The vestiges of volcanic phenomena at the foot of Mount Argæus had also attracted his attention, and he describes the plain below Mazaca as impregnated with fire, which was visible in holes and chasms for an extent of many stadia.[5] If this account be not greatly exaggerated, there must have been volcanic outbreaks of the mountain at a period much more recent than is generally supposed. Strabo however does not mention any tradition of such an event.

He gives a distinct account of the course of the two important rivers, the Sarus and the Pyramus, which took their rise in Cappadocia, and thence bursting their way through

[3] xii. 2, § 7. He tells us that Mount Argæus is the most lofty of all (in Asia Minor?), and its summit is covered with perpetual snow: that those who ascend it, who are few in number, assert that in fine weather both seas, the Euxine and the Gulf of Issus, might be seen from its summit. This story has every appearance of being gathered from the inhabitants of Mazaca. The first traveller in modern times who made the ascent was Mr. William Hamilton, who met with cloudy weather, but did not believe it possible that the two seas could be seen in any case, on account of the high mountains which intervene both to the N. and the S. (Hamilton's *Asia Minor*, vol. ii. p. 280). Its elevation he calculates at 13,000 feet, and there is not only much snow on the summit, but extensive glaciers descend from thence on its northern and eastern flanks. Since that time the mountain has been again ascended by M. Tchihatcheff.

[4] xii. p. 540. He terms this *μίλτος*, and evidently considers it as identical with that of Spain, which is true cinnabar; but the Sinopic *μίλτος* was only a kind of bright red earth, of an ochreous nature.

[5] xii. 2, § 7. *πυρίληπτα πεδία καὶ μεστὰ βόθρων πυρὸς ἐπὶ σταδίους πολλούς.*

the lofty ranges of Mount Taurus flowed through Cilicia to the sea.[6] Of the remarkable gorge by which the Pyramus forced its way through the mountains he has given us a particular description, which was evidently derived from personal observation.[7]

§ 13. With Pontus he was of course familiar, and it is an important fact in the ethnography of Asia that he distinctly confirms the statement of Herodotus and other writers that the Cappadocians, who had originally extended from the chain of Taurus to the Euxine, were of Syrian extraction, or belonged to the great Aramæan race, in common with the Syrians and Assyrians.[8] At the same time he speaks of the various tribes inhabiting the mountain ranges near the Euxine, the Moschi, the Tibareni, and the Chaldæans,—in terms which seem to imply that they were separate tribes, and they may probably have been of a different race, perhaps more connected with their Armenian and Caucasian neighbours. But the ethnography of these mountain tribes is a problem of hopeless perplexity. It is certain however that the separation of Pontus from Cappadocia was a purely artificial one, arising in the first instance from the division of the great province of Cappadocia under the Persian Empire into two satrapies, which after the Macedonian conquest gradually became consolidated into separate kingdoms.[9] The boundary as finally established was one of the mountain ridges parallel with the Taurus, which traverse this part of Asia Minor, but it cannot now be identified.[1]

Strabo has left us a detailed enumeration of the districts into which Cappadocia was divided in his time, eleven in all, but several of these are otherwise unknown, and cannot be

[6] xii. 2, §§ 3, 4, p. 536.

[7] The words *οὕτως εἴδομεν* are conclusive on this point.

It is only quite of late years that these defiles of the Taurus, which connect the uplands of Cataonia with Cilicia, have been explored by modern travellers.

[8] This is disputed by Sir H. Rawlinson (*Herodotus*, vol. i. pp. 653-4), but his arguments appear to me far from convincing; and it is difficult to see how Strabo could have been mistaken upon such a point.

[9] Strabo, xii. 1, § 4, p. 534.

[1] xii. 2, § 10, p. 540.

determined with any certainty. There were only two cities in the whole country, which he considers worthy of the appellation, Mazaca and Tyana: the other districts contained only a scattered population, with a few strongholds or fortresses, among which that of Nora, so long defended by Eumenes, was one of the most celebrated. Even the fertile district of Melitene, adjoining the Euphrates, which presented a great contrast to the rest of Cappadocia from its abounding in vines and fruit-trees, did not contain a town of any importance.[2]

The description of Pontus by Strabo[3] is one of the most complete and satisfactory portions of his work, and is by far the best account that we possess from any ancient writer of a country that until very recently was but imperfectly known to modern geographers. With it he associates the Lesser Armenia, obviously on account of its situation west of the Euphrates, as that district was politically connected either with Armenia properly so called, or with Cappadocia.

On the other hand the mountain tribes of the Tibareni and Chaldæans who inhabited the ranges of Paryadres, between the confines of Armenia Minor and the Euxine, were under the rule of Pythodoris, who bore the title of Queen of Pontus. These mountaineers, as well as their neighbours the Moschi, who more immediately adjoined the confines of Colchis, were still in a very rude and barbarous condition, dwelling in great forests, and subsisting on wild fruits and the flesh of animals procured by the chase.[4] Some of them even lived in trees; others in high towers. These last were the Mosynœci of Xenophon, but Strabo does not recognize the name as one existing in his time.[5] He tells us however that the people to whom he gives the name of Chaldæans, were the same who had been formerly called Chalybes,[6] and had been renowned

[2] xii. 2, § 6, p. 537. The strong fortress of Tomisa, which figures prominently in the Mithridatic Wars, was situated on the eastern side of the Euphrates, and consequently belonged properly to Sophene. Ib. § 1, p. 535.

[3] xii. 3. The geography of this part of Asia Minor was but little known in modern times before the travels of Mr. William Hamilton in 1836 (published in 1842).

[4] Ibid. § 18, p. 549.

[5] Ibid.

[6] xii. 3, § 19.

from the earliest ages as workers in iron: and he then enters into a long and tedious discussion[7] to show that these were the same people termed by Homer Halizones, who dwelt about a place called by the poet Alybe, "where was the birth-place of silver."[8] The connection of the names Alybe and Chalybes would be probable enough, were it supported by any other arguments: but it is not; and had the poet ever heard of so distant a people as the Chalybes, it would doubtless have been as workers in *iron*, the natural abundance of which in the region in question must have attracted attention from a very early period.[9]

Mithridates the Great having extended his dominion along the shores of the Euxine from the borders of Colchis to Heraclea, thus including all the sea-coast of Paphlagonia, and a part of that of Bithynia, Strabo has adopted the same extension, and has described under the head of Pontus the whole southern coast of the Euxine, beginning from Heraclea. This long line of sea-board was studded throughout with Greek colonies, some of which, as Heraclea, Sinope, Amisus, Pharnacia and Trapezus, were flourishing and important commercial cities; while many smaller settlements are noticed in detail by Strabo, who was evidently well acquainted with the whole line of coast, and has given a careful enumeration of its rivers and headlands, as well as of the towns which lined its shores.[1]

§ 14. It is quite otherwise with the interior of the country. So far as the province of Pontus, properly so called, is con-

[7] xii. 3, §§ 20–24.

[8] αὐτὰρ Ἀλιζώνων Ὀδίος καὶ Ἐπίστροφος ἦρχον,
τηλόθεν ἐξ Ἀλύβης, ὅθεν ἀργύρου ἐστὶ γενέθλη.
Homer, *Iliad*, II. v. 857.

[9] See the interesting account of the mode in which iron is worked at the present day in this district, in Hamilton's *Travels in Asia Minor*, vol. i. pp. 271–277. Silver mines are now worked at Gumisch Khana in the interior, south of Trebizond, but these are not mentioned by Strabo; and it appears that in his time there were no silver mines in the land of the Chalybes, though he *assumes* that there were in the time of Homer (ἐκ δὲ τῆς γῆς τὰ μέταλλα, νῦν μὲν σιδήρου, πρότερον δὲ καὶ ἀργύρου. xii. 3, § 19). See Note A, p. 336.

[1] xii. 3, §§ 7–18, pp. 543–548. In this instance we have the advantage of comparing the details furnished by Strabo, with the equally minute particulars in the Periplus of Arrian.

cerned, the knowledge of our author was complete and definite, as might naturally have been expected with regard to his native country. His description of the fertile valleys and plains of Western Pontus is highly characteristic, and almost all the localities which he describes have been readily identified by modern travellers. The picture which he gives us of his native city Amasia, and its very peculiar and striking position, was found by Mr. Hamilton to be at once clear and satisfactory, though it had been imperfectly understood by persons who had not visited the locality.[2] But the personal knowledge of Strabo evidently extended very little, if at all, beyond the Halys, and with the interior of Paphlagonia and Bithynia, as well as the great provinces of Galatia, Phrygia, and Mysia, his acquaintance was apparently very imperfect. The brief and perfunctory manner in which he describes these interior regions of Asia Minor affords a strong contrast with the fullness and clearness of his account of Pontus, as well as with the copious details which he furnishes concerning the provinces on the western coast.

He tells us indeed expressly[3] that it was difficult to define the limits of the different nations that occupied the interior of Asia, and even those of Bithynia and Mysia, on account of the frequent changes and fluctuations, ethnographical as well as political, to which they had been subject. In the former point of view he distinctly inclines to regard the Mysians, Bithynians and Phrygians as cognate races, probably all alike of Thracian origin.[4] The Galatians were of course well known as a historical fact to be Gauls, and the three tribes into which they were divided still retained the purely Gaulish names of Trocmi, Tolistobogii, and Tectosages.[5] South of Galatia, on the confines of Cappadocia and Phrygia, he places the great salt lake of Tatta, which constitutes in fact one of the leading physical features of the interior.[6] Immediately to the south

[2] Hamilton's *Researches in Asia Minor*, vol. i. pp. 366–370.
[3] xii. 4, § 4, p. 564; 8, § 2, p. 571.
[4] Ibid. p. 564. The same view was taken by Herodotus (vii. 73, 74).
[5] See Chapter XX. Note B, p. 200.
[6] xii. 5, § 4, p. 568. His description of it has been fully confirmed by recent

of this again lay the cold and upland tracts of Lycaonia and Isauria, bare of wood and deficient in water, but furnishing pasturage to innumerable flocks of sheep: a description exactly corresponding to their present condition. Iconium was the only city of importance in Lycaonia. Isauria immediately adjoined the foot of the Taurus, and within the rugged ranges of that mountain chain were the Pisidians, whose lofty and inaccessible strongholds had afforded them shelter during the piratic wars, so that they were with great difficulty reduced by P. Servilius, who derived from his exploits the surname of Isauricus.[7] The Pisidians again adjoined on the south the fertile maritime district of Pamphylia, with its flourishing cities of Side and Aspendus. Notwithstanding the rugged and difficult nature of their country the Pisidians seem to have been well known to the neighbouring Greeks, and Strabo cites from Artemidorus the names of thirteen of their cities, the most important of which were Sagalassus and Selge. Of the latter of these, and its extraordinary position, he has given a minute account (probably derived from the same authority), which has been confirmed by the researches of recent travellers.[8]

§ 15. While he describes the great inland province of Phrygia, as already mentioned, very briefly and imperfectly, he was well acquainted with that portion of it which adjoined the frontiers of Caria, through which led the great high-road from Ephesus to Apamea. The latter city, the position of which he describes very fully and with remarkable accuracy, was in his day become one of the principal centres of trade in all Asia, being in this respect second only to Ephesus itself.[9] It was

travellers, though not unmixed with exaggeration. It is now called by the Turks Tuzla, or the Salt Pan, from the extent to which it is saturated with salt.

[7] In the time of Xenophon as we have seen, the Pisidians, though nominally subject to the Persian Empire, were practically a race of independent freebooters. (See Chapter X. p. 345.)

[8] Strabo, xii. 7, p. 570. The site of Selge, which is still called Serghe, was first identified by Mr. Daniell in 1843. (See Spratt and Forbes's *Lycia*, vol. ii. pp. 17–32.)

[9] xii. 8, § 15, p. 577. It is not improbable that Strabo's description of Apamea may be derived from personal observation. We learn distinctly that he had himself visited the city of

from thence that the most frequented line of route led through Antiochia, Philomelium and Mazaca in Cappadocia (Cæsarea) to the Euphrates, and thence into the interior of Asia.[1]

The whole of the thirteenth, and the greater part of the fourteenth book of Strabo are devoted to the description of the western provinces of Asia Minor, from the Propontis to the frontiers of Lycia; including the Troad, Ionia, Lydia and Caria, with the adjacent islands. All these regions were of course well known to the Greeks, and Strabo could no more attempt to add to the previously existing information than in regard to Greece itself. But his account of them, considered as a geographical description of a well-known country, stands on a very different footing from that of European Greece. He had here the advantage of extensive personal acquaintance, having been sent, as we have seen, when quite a young man, to study at Nysa in Caria, and having visited Ephesus and other cities of Ionia and Caria,[2] besides having necessarily seen, on his passage thither, a great part of the coasts and islands of this side of the Ægean. But besides this he had evidently for this part of his work the use of much better materials and authorities than any of which he availed himself in his description of Greece.

This is particularly the case with regard to the Troad, under which name he comprises the whole of the north-western angle of Asia, from the Propontis to the Gulf of Adramyttium. Here he had the advantage of following Demetrius of Scepsis, who, as we have seen, had devoted a special treatise to the discussion of the Homeric Catalogue of the Trojan allies, in which he had naturally examined with minute care the localities and names in the neighbourhood of Troy itself, and his investiga-

Hierapolis in the valley of the Mæander on the confines of Lydia and Phrygia (xiii. 4, § 14), and only 60 miles distant from Apamea. This circumstance sufficiently explains the accurate knowledge he shows of Laodicea (which he reckons the second city in importance in Phrygia), Hierapolis, and the smaller towns in the same neighbourhood, Colossæ, Eumenia, &c. (xii. 8, §§ 13, 16).

[1] xiv. 2, § 29, p. 663.

[2] The extent of his travels in this part of Asia cannot be determined; but he appears during his residence at Nysa to have visited several of the neighbouring cities, including Mylasa in Caria, and Hierapolis in Phrygia.

tion had been materially aided by the situation of his birthplace of Scepsis in the very centre of the region in question. The consequence is that Strabo, who devotes, as he himself acknowledges, a somewhat disproportionate space to the examination of this small portion of Asia Minor, has in this instance presented us with a chorographical description of the country, superior to any other that we find in his whole work: while the incidental discussions and controversies in regard to the Homeric names of localities and nations, though necessarily arising in connection with this subject, are far from occupying the disproportionate amount of attention which they do in the case of European Greece. The most interesting of these controversies at the present day is undoubtedly that relating to the true position of Troy itself, or the Homeric Ilium, a question first raised by Demetrius of Scepsis, but for our knowledge of which we are wholly indebted to Strabo, who adopted in their full extent the views of his much valued authority.[3]

We are not clearly informed what authors he followed in respect to the neighbouring countries of Ionia, Lydia and Caria, or how much may have been derived from his own personal observation: but there is nothing to exclude the supposition that he had himself visited the principal cities of this part of Asia, and we know that he had extended his travels for some distance into the interior. His notices of Sardis and the tombs of the Lydian kings on the lake Coloë, and still more his account of the curious volcanic district called Katakekaumene—the Burnt Land—have every appearance of being the result of actual inspection.[4] He justly points out the con-

[3] Strabo, xiii. 1, pp. 595, 597. How little attention these sceptical views attracted in ancient times is sufficiently shown by the fact that they are not even thought worthy of mention by Pliny, who dismisses the far-famed city with the brief and passing notice: "Est tamen et nunc Scamandria civitas parva, ac MD passus remotum a portu Ilium immune, unde omnis rerum claritas" (v. 33, § 124). The Ilium to which he here refers is of course the city so called in his day, and which enjoyed immunity from tribute, as the reputed parent of Rome.

[4] xiii. 4, § 11. For a full description of this interesting geological district, see Hamilton's *Travels*, vol. ii. pp. 128–138; and Tchihatcheff, *Asie Mineure*.

Strabo describes three distinct craters, about 40 stadia distant from one another, and surmounted by rugged

nection between these extinct volcanic phenomena, and the earthquakes to which all this part of Asia was eminently subject, especially Philadelphia, the city nearest to the Burnt Country, where earthquakes were so frequent that Strabo expresses his wonder how the inhabitants could be induced to live there.[5] The great earthquake which a few years before (A.D. 17) had destroyed, or seriously damaged, twelve of the chief cities in this part of Asia, especially Sardis and Magnesia ad Sipylum,[6] was, as he tells us, only one among many similar calamities, from which they had repeatedly suffered. Full information concerning other places in the interior must have been readily obtainable from the Greeks in the cities nearer the coast: and we cannot doubt that it was Strabo's early personal acquaintance with these regions that led to his collecting the materials concerning them, which he has put together in so clear and satisfactory a manner.

§ 16. Proceeding along the southern coast of Asia Minor, he describes in succession Lycia, Pamphylia and Cilicia, with the neighbouring island of Cyprus. His account of Lycia, though brief, is very clear and distinct in a geographical point of view, and we are indebted to him for giving us on this occasion an account of the constitution of the Lycian League, which has been regarded by some political writers in modern times as the model of a well-constituted federation.[7] For this, as well as for the geographical description of the country he was apparently indebted to Artemidorus:[8] and the same writer was probably one of his chief authorities in respect to Pamphylia and Cilicia also. But as Strabo had attended the lectures of Xenarchus, a Peripatetic philosopher, who was a native of

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hills, which he reasonably infers to have been formed of the heated matter ejected from them. He notices also that this volcanic district, like that of Catania in Sicily, was specially favourable to the growth of vines.

[5] xii. 6, § 18; xiii. 4, § 10.

[6] Ibid. xii. 8, § 18; xiii. 3, § 5; 4, § 8, Tacit. *Annal.* ii. 47.

[7] See the remarks of Mr. Freeman, in his *History of Federal Government* (vol. i. pp. 208-216), who cites also the observation of Montesquieu (*Esprit des Loix*, liv. ix. c. 3), that if he were called upon to choose a model of a federal republic, he would take that of Lycia.

[8] See xiv. 3, § 3, p. 665.

Seleucia on the Calycadnus, he may well have derived some particulars from that master.[9] His description of Tarsus also is of a character to lead very strongly to the inference that he had visited that city in person. But be this as it may, it is certain that he possessed very good information concerning the whole of this line of coast, and that his enumeration of the cities and towns, as well as of the rivers and headlands that formed its marked natural features, is found to be at once copious and trustworthy. Of the interior there was of course little to tell, the lofty and rugged ranges of Mount Taurus impending over the sea at so short a distance that there had never been any Greek settlements or civilized towns at any distance from the sea-board; except in the extreme east of Cilicia, where the mountains receded from the shore and the broad alluvial plain formed by the deposits of the rivers Sarus and Pyramus extended from the foot of the Taurus to that of the Syrian Amanus.[1]

§ 17. While Strabo's general description of Asia Minor is on the whole thus full and satisfactory, it is remarkable how little pains he has taken to furnish us with positive data as to distances and positions, such as would enable a geographer to construct a map of the country. He has indeed given such distances by *sea* along the coast of the Euxine from Trapezus to the entrance of the Bosphorus, as well as for the west coast, adjoining the Ægean, but in regard to the latter he himself points out that the extremely irregular configuration of the coast, and the number of the projecting headlands and peninsulas, rendered the *periplus* or coasting voyage from one point to another disproportionately long as compared to the direct

[9] Groskurd assumes that Strabo studied under Xenarchus *at Seleucia*, but there is no proof of this, and as he himself tells us that Xenarchus lived but little at home (*ἐν οἴκῳ μὲν οὐ πολὺ διέτριψεν*), but spent the greater part of his life at Alexandria and Athens, and finally at Rome, as a teacher (xiv. 5, § 4), it is much more probable that Strabo followed his lectures in the latter city.

[1] The alluvial character of this plain, and its rapid extension by the accumulations of the rivers, could not fail to attract attention; and an oracle was said to have foretold that the deposits of the Pyramus would one day reach to Cyprus (Strabo, xii. 2, p. 536).

distance.[2] But notwithstanding this he considers the whole line of coast from the south-west extremity of Caria to the Propontis as preserving a general direction from south to north "as it were on a meridian line,"[3] and measuring in direct distance about 5000 stadia, or but little less. This same line he considered as prolonged (according to the erroneous conception to which we have already more than once adverted) in the same direction to Cyzicus and Byzantium. As might be expected under the circumstances his estimate of 5000 stadia is greatly exaggerated, the distance from Rhodes to the Hellespont by the nearest course which was possible for a navigator to pursue being little more than 300 G. miles (3000 stadia), while that measured along *a meridian line* would not exceed 4 degrees of latitude or 2400 stadia. But such a line instead of falling, as he supposed, at the entrance of the Hellespont, would in reality strike the Propontis east of Cyzicus.

He also, in common with all his predecessors, exaggerated the degree to which the promontory of Carambis projects into the Euxine towards the north; while on the south coast on the contrary he does not seem to have been aware of the extent to which Lycia projects towards the south beyond the southernmost point of Caria.[4] But his incidental notice that the Chelidonian Islands were opposite to (*i.e.* on the same meridian with) Canopus in Egypt, is remarkably accurate,[5] and supplies an important point in constructing the map of this part of the Mediterranean.

§ 18. For the interior of the country he was possessed of

[2] xiv. 1, § 2, p. 632.

[3] καὶ λοιπὸν ἐπ' εὐθείας ὁ πλοῦς μέχρι τῆς Προποντίδος, ὡς ἂν μεσημβρινήν τινα ποιῶν γραμμὴν ὅσον πεντακισχιλίων σταδίων ἢ μικρὸν ἀπολείπουσαν, xiv. 2, § 14. It would be difficult to find a coast to which such a characteristic was *less* applicable than to the west coast of Asia Minor.

[4] xiv. 5, § 22, p. 677. He is here arguing against Apollodorus, but neither one nor the other appears to have had any clear idea of the configuration of this part of Asia Minor, which is indeed so complicated that we cannot wonder at any one unprovided with a good map, on which the bearings were correctly laid down, failing to understand it.

[5] xiv. 3, § 8, p. 666. δοκοῦσι δὲ αἱ Χελιδόνιαι κατὰ Κάνωβόν πως πίπτειν. The actual difference of longitude does not exceed 20'.

very inferior materials: here he has given us, besides some distances by land in Ionia and Caria, only one main line of route, which he has taken from Artemidorus;[6] and even in this instance he has not given us the distances in detail. The route in question, which was that habitually followed in Strabo's time by all travellers proceeding from Ephesus towards the East, led from that city through Magnesia, Tralles, Nysa, and Antiochia to a place called Carura, on the confines of Caria and Phrygia, a distance of 740 stadia: thence through Phrygia, passing through Laodicea, Apamea and Metropolis to a place called Holmi, on the frontier of the district known as the Paroreius, 920 stadia: then across the Paroreius to Tyriæum on the confines of Lycaonia, a little more than 500 stadia: across Lycaonia, passing through Laodicea (called for distinction's sake Katakekaumene) to Coropassus 840, and from Coropassus to Garsaura, a small town on the confines of Cappadocia, 120: thence to Mazaca, the capital of Cappadocia, 680 stadia; and from Mazaca to the Euphrates at Tomisa, 1440. From thence a road led across the chain of Taurus to Samosata on the Euphrates, a distance of 450 stadia.[7]

It is singular that he has not furnished us with a single line of route, or detail of distances *across* Asia Minor from the Cilician or Syrian Sea to the Euxine, though he repeatedly discusses the question of the so-called isthmus which united the peninsula of Asia Minor to the continent of Asia. We have seen that from the time of Herodotus downwards a very erroneous notion had prevailed of the breadth of this isthmus, or the interval from sea to sea, from the Gulf of Issus to that of Amisus. That historian had described it as five days' journey for an active man, and even Artemidorus (according to Strabo) had estimated it at only 1500 stadia. Our geographer, on the contrary, following the statement of Eratosthenes, considers it as not less than 3000 stadia, which is actually in excess of the truth, if measured in a direct line, as was certainly

[6] See Chapter XVIII. p. 67.

[7] Strabo, xiv. 2, p. 663.

intended in this instance. But he correctly judges that the line should be drawn across either from the mouth of the Cydnus below Tarsus, or from the Gulf of Issus to Amisus, and not to Sinope, as had been done by several preceding geographers.[8] Supposing the distance thus measured from sea to sea, nearly along a meridian line, the interval is really about 4° 20′ of latitude, or 260 G. miles (2600 stadia), so that the estimate of Eratosthenes and Strabo is not very wide of the truth. But the admission that the supposed isthmus was really so broad as this in great measure destroyed the idea of the peninsular character of Asia Minor, which had come to be a received article of faith among ancient geographers.[9]

§ 19. Strabo's account of India, which occupies the greater part of his fifteenth book, is in some respects one of the most interesting parts of his work, and must have been still more so to his contemporaries, from the numerous particulars that he has brought together with regard to the natural productions and physical peculiarities of the country, as well as the singular political institutions and customs of its inhabitants. These are taken almost entirely either from Megasthenes, or from the still earlier writers, Nearchus, Onesicritus, and Aristobulus, who had accompanied Alexander on his expedition down the Indus, and had collected much hearsay information concerning other parts of India which they had not themselves visited. Later sources of knowledge he appears to have had absolutely none. Though a considerable trade was carried on in his day by way of the Red Sea with India, and some of the traders were even said to extend their voyages as far as the Ganges, they were for the most part (he tells us) ignorant men, from whom no information could be obtained concerning the countries they visited.[1]

[8] Amisus was in fact situated more than 40 G. miles, or 400 stadia farther to the south than Sinope; and the distance therefore by so much the less.

[9] The broadest part of Asia Minor, from Cape Anemurium on the S. to Cape Carambis on the N. is only about 6°, or 360 G. miles, across from sea to sea.

[1] Strabo, xv. 1, § 4, p. 686. His statement, that *but few of them* made the voyage round India to the mouth of the Ganges (*σπάνιοι μὲν καὶ περιπεπλεύκασι μέχρι τοῦ Γάγγου*), must certainly be meant to imply that *some* of them *did* or were said to have done so; but it may well be doubted whether Strabo

He is indeed careful to impress upon his readers the vague and uncertain character of the materials which he had at his command, and upon which he was forced to rely. India had from a very early period taken a strong hold upon the imagination of the Greeks, and had thus become the subject (as Strabo points out) of almost endless exaggerations and fables. For this reason he dismisses at once with contempt all the marvellous tales of Ctesias and other early writers, and justly regards the expedition of Alexander as having for the first time opened out trustworthy information concerning this far-famed, but little-known, region. But even the writers of this period he found far from agreeing among themselves, sometimes varying even with regard to facts which had come within their own observation, and still more concerning such as they could only have learnt by hearsay.[2] The care which Strabo takes to excuse himself on account of discrepancies and probable errors arising from these causes is sufficient proof that he had no means of correcting them from any later authorities. But, as we have seen in discussing the information collected by Megasthenes and his contemporaries,[3] their statements concerning the natural productions of India, which must have come under their own personal observation, are generally accurate and trustworthy, while those relating to the manners and customs of the inhabitants and the peculiar social polity, which was calculated in an especial degree to arrest the attention of an intelligent Greek traveller, if not in all respects correct, contained much that was really valuable and interesting.

§ 20. Unfortunately the case was far otherwise in regard to the purely geographical knowledge of the country. In this respect Strabo does not pretend to have made any advance

had met with any one who had really made the voyage. His report of the embassy of the Indian king Porus to Augustus, already noticed (see Chapter XX. p. 166), is derived from Nicolas of Damascus (xv. 1, § 73).

[2] Id. xv. 1, §§ 2, 10. Even those who had themselves visited the country, as he truly observes, had only seen a small part of it, along certain lines of march or route, and must describe all the rest at second hand.

[3] See Chapter XIV. sect. 1.

upon his predecessors, and he adopts without modification the conclusions of Eratosthenes upon these points, while he admits the untrustworthy character of his materials, and his consequent liability to error.[4] In one instance only had Eratosthenes possessed more definite and trustworthy information, which was doubtless derived from Megasthenes. This was with regard to the so-called "royal road" to Palibothra, which the Greek envoy had undoubtedly travelled, and the distances along which were *measured*.[5] Relying upon this, he had reckoned the distance from the Indus to Palibothra at 10,000 stadia (1000 G. miles), to which he added 6000 more for the distance from thence to the mouth of the Ganges, and thus obtained 16,000 in all for the total length of India. Patrocles, as Strabo tells us, diminished this estimate to 15,000; but he gives us no account of the grounds of this correction, and does not take upon him to decide between them.[6] He adopts also the view of Eratosthenes with regard to the *orientation* of India, and its greatest length being from west to east, in opposition to the more correct conclusions of Megasthenes. Hence he considers the promontory of the Coniaci (Cape Comorin) to project to the south-east, so that its extreme point was 3000 stadia farther east than the mouth of the Ganges. His conception of the map of India did not therefore differ in any material particular from that of Eratosthenes.

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[4] Strabo, xv. 1, §§ 10, 11, p. 688.

[5] Ibid. § 11. *τούτου δὲ τὸ μὲν μέχρι Παλιβόθρων ἔχοι τις ἂν βεβαιοτέρως εἰπεῖν; καταμεμέτρηται γὰρ σχοινίοις, καὶ ἔστιν ὁδὸς βασιλικὴ σταδίων μυρίων.*

This must undoubtedly be the same route, the measurements along which are given by Pliny, but in so confused and corrupt a manner as to be of no real value (see Chapter XIV. p. 557). The sum total of his distances would give 1611 Roman miles, or 12,888 stadia *from the Hyphasis* to Palibothra, while Eratosthenes reckoned only 10,000 stadia *from the Indus* to the same city, and even this is considerably beyond the truth.

[6] As no Greek had been *beyond* Palibothra, it is clear that the estimate of the distance from thence to the sea must have been founded on mere hearsay, and from the nature of the country this must have been of the vaguest description. But the estimate of 5000 stadia (500 G. miles) adopted by Patrocles is a very fair approximation for the distance from Palibothra *to the mouth of the Ganges*. The distance *to the sea* at the mouth of the Hoogly is of course much less, but of this the Greeks had evidently no notion. It was a received idea among them, and is distinctly repeated by Strabo himself (xv. 1, § 13), that the Ganges had but one mouth!

In proceeding to describe the rivers of India, he justly remarks that while the principal rivers of any country formed one of its most important geographical features, this was pre-eminently the case with India, where the rivers, as in the case of Egypt and the Nile, were essential to the fertilization of the country, which was only rendered habitable through their means.[7] This was strictly true with regard to the countries watered by the Indus and its tributaries, and regarding those on the banks of the Ganges and its affluents Strabo had very imperfect information. This he himself repeatedly acknowledges, and while he describes in detail the rivers flowing into the Indus, and the lands that lay between them, he tells us that the others were rather unknown than known.[8] The name of the Ganges was indeed familiar to all: and though very exaggerated statements were current as to its size and width, it was generally agreed that it exceeded the Indus in magnitude, and was in fact the largest river in the known world.[9] But Strabo not only does not attempt to enumerate the numerous great tributaries that flow into it,[1] but he does not specifically notice any of them, merely observing in passing that Artemidorus calls one of them by the name of Œdanes,[2] and that another fell into the Ganges under the walls of Palibothra.[3] He cites also from Artemidorus the correct

[7] xv. 1, § 26, p. 697.

[8] *τῶν δὲ ἄλλων ἐστὶν ἄγνοια πλείων ἢ γνῶσις.* Ibid.

[9] *ὅτι μὲν γὰρ μέγιστος τῶν μνημονευομένων κατὰ τὰς τρεῖς ἠπείρους, καὶ μετ' αὐτὸν ὁ Ἰνδός . . . ἱκανῶς συμφωνεῖται.* xv. 1, § 35.

This had been already stated by Megasthenes, and probably adopted from him by succeeding writers.

[1] The absence of all attempt at such an enumeration is the more remarkable as Megasthenes had given a list of no less than nineteen affluents or tributaries of the Ganges (Arrian, *Indica*, c. 4). Apparently Strabo had no means of selecting the most important, and did not choose to burden his text with such a number of unknown names.

[2] Οἰδάνης. It is thus that the name is found in our text of Strabo (xv. 1, § 72): but as no such name is mentioned by any other writer, the latest editors have proposed to read Οἰμάνης, or Ἰομάνης. It is certain that the omission of all mention in Strabo of the Iomanes, or Jumna, the most important of all the tributaries of the Ganges, is very singular, but even if its name were here introduced, its mere passing mention would show that Strabo was wholly unaware of its real importance.

[3] xv. 1, § 36, p. 702. The name of this river has dropped out of our existing text of Strabo, but it is probable that the author wrote Erannoboas, which we find in the parallel passage of Arrian (*Indica*, c. 10, § 5).

statement that the Ganges had its source in the Emodi Mountains (one of the many names by which the Himalaya was known to the Greeks), and flowed at first to the south, afterwards taking a turn to the east, which course he supposed it to pursue to Palibothra, and from thence to the Eastern Sea.[4]

§ 21. Of the great mountain chain that formed the northern boundary of India, and which, in accordance with the system of Eratosthenes, he regarded as a prolongation of the Taurus, and extending from west to east, he had no detailed knowledge, and merely tells us that its different portions were known by the native appellations of Paropamisus, Emodus, Imaus, and other names, without attempting to define or localise them further.[5] But it appears from another passage[6] that he applied the name of Imaus to the extreme eastern portion of the range, which ended, according to his ideas, in the Eastern Ocean; while that of Paropamisus we know to have belonged to the mountain ranges north of Afghanistan, now called the Hindoo Koosh. It remains therefore to apply the name of Emodus or Emodi to the great central chain of the Himalayas, in which the Ganges as well as the Jumna and Sutledge takes its rise: and this appears to be the sense in which Strabo understood the term, though differing materially from its use by later geographers.[7]

Of the great peninsula of India, to the south of a line drawn from the mouths of the Indus to those of the Ganges, he gives us no particulars at all. Altogether it may safely be asserted that while Strabo in his account of India has shown much judgement in the collection of his materials from preceding writers, and a

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[4] xv. 1, § 72.

[5] Τὴν Ἰνδικὴν περιώρικεν ἀπὸ μὲν τῶν ἄρκτων τοῦ Ταύρου τὰ ἔσχατα ἀπὸ τῆς Ἀριανῆς μέχρι τῆς ἑῴας θαλάττης, ἅπερ οἱ ἐπιχώριοι κατὰ μέρος Παροπάμισόν τε καὶ Ἠμωδὸν καὶ Ἴμαον καὶ ἄλλα ὀνομάζουσι. Μακέδονες δὲ Καύκασον. xv. 1, § 11, p. 689.

[6] xi. 11, § 7, p. 519. τοῦ Ταύρου τὸ τελευταῖον ὃ καλοῦσιν Ἴμαιον, τῇ Ἰνδικῇ θαλάττῃ ξύναπτον.

[7] In accordance with this, as we have seen, Artemidorus described the Ganges as rising in the Emodian mountains (ἐκ τῶν Ἠμωδῶν ὀρῶν, *l. c.*), and Strabo speaks of the forests between the Hydaspes and Acesines as at the foot of the Emodian mountains (ἡ πρὸς τοῖς Ἠμωδοῖς ὄρεσιν ὕλη, xv. 1, § 29, p. 698).

sound spirit of criticism in rejecting many fables and exaggerations, there is hardly any part of his work which shows less progress in real geographical knowledge beyond that already possessed by Eratosthenes and his other predecessors.

In regard to the island of Taprobane also, which in common with Eratosthenes he regarded as situated at the southern limit of the known world, he had nothing to add to what he derived from the Alexandrian geographer, and adopted his erroneous ideas of its position and extent. Of the great and wealthy islands farther east, or of the vast extension of portions of the Asiatic continent beyond the mouths of the Ganges, not the faintest rumour had reached his ears. He had found indeed in his authorities the name of the Seres, of whose longevity marvellous tales were related,[8] but evidently supposed them to be merely an Indian tribe.

§ 22. Very much the same remark as applies to Strabo's description of India may be made also with regard to the next great division of Asia—the countries which he comprises under the general name of Ariana. Under this head he includes all the provinces extending from the frontiers of India westward to those of Persia, and from the Taurus and the Paropamisus southward to the Persian Gulf and the Erythræan Sea. As employed in this comprehensive sense, the term comprised the provinces of Gedrosia, Arachosia, the Paropamisadæ, Drangiana and Carmania, and extended over the greater part of the great central *plateau* or table-land of Iran, exclusive however of Persis or Persia Proper, and of Media, of which he had already treated separately: but including apparently the great salt desert which occupies the whole central portion of this *plateau*, extending from the frontiers of Seïstan (Drangiana) to those of Yezd and Kerman. Of the vast extent and importance of this great natural feature of the tract in question[9] Strabo seems to

[8] XV. 1, § 34, p. 701; § 37, p. 702.

[9] The Khubeer or Great Salt Desert in the north of Persia is itself in length about 400 miles, and 250 in breadth (Kinneir's *Persian Empire*, p. 19), but this joins on to the deserts of Kerman, Seïstan, and others of scarcely inferior extent.

have had a very inadequate idea, and only briefly mentions it as the desert portion of Carmania, extending to Parthia on the one side and to Parætacene on the other. But of all these regions he had no further knowledge than that which had been derived from the historians of Alexander, and had been already put into a definite geographical form by Eratosthenes, to whom he distinctly refers as the best authority, upon whose information he was not able to make any improvement.[1]

He describes at considerable length, though with very little geographical detail, the celebrated march of Alexander through Gedrosia; but though this portion of his work is interesting for comparison with the narrative of Arrian, it contributes very little to clear up the grave geographical difficulties with which, as we have seen, the accounts of that march are complicated:[2] while we are left almost entirely in the dark as to the march of Craterus with one main division of the army through Arachosia and Drangiana to Carmania—a line of route which must have contributed much to elucidate the geography of Ariana.[3]

Of the other countries included in this section of his work he has given us only a very brief and summary account: but we are indebted to him for one important ethnographical notice—that the name of Ariana was sometimes employed in a wider sense, as comprising a part of Persia and Media, as well as Bactria and Sogdiana to the north, *for that these nations also spoke nearly the same language*:[4] a statement which, as Prof. Wilson observes, there is every reason to believe correct.[5] It is remarkable that in regard to all these countries he appears to have derived his information almost exclusively from Eratosthenes or still earlier writers: we find no reference to the existence even of such itineraries as that which is still preserved to us under the name of Isidore of Charax. The knowledge of

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[1] xv. 2, § 8. περὶ ὧν Ἐρατοσθένης οὕτως εἴρηκεν· οὐ γὰρ ἔχομέν τι λέγειν βέλτιον περὶ αὐτῶν.

[2] See Chapter XII. Note X x, p. 519.

[3] Ibid. Note Y y, p. 521.

[4] xv. 2, § 8, p. 724. εἰσὶ γάρ πως καὶ ὁμόγλωττοι παρὰ μικρόν.

[5] Wilson's *Ariana*, p. 121.

all Upper Asia still remained in almost precisely the same condition which it had attained under the successors of Alexander.

§ 23. The last section of his fifteenth book is devoted by Strabo to Persis, or Persia properly so called, with the adjacent province of Susiana. Both of these districts were of special interest to the Greeks as having been so long the seat of the great Persian Empire that had extended its dominions from the banks of the Indus to the shores of the Mediterranean: and their leading geographical features had long been familiar to all. The characteristic division of Persia into three parallel tracts of very different physical character and climate, and yielding in consequence wholly different productions, is well described.[6] The first of these, a band extending along the sea-shore from the frontier of Carmania to the river Oroatis, was parched with heat, of a sandy soil and producing little else except dates. This is the tract now called the Ghermsir, or hot region, and which fully corresponds with the description of Strabo. Above this was a fertile district capable of producing all kinds of crops and especially favourable to the pasturage of sheep: while above this again to the north was a rugged and cold mountain region. The character of these separate tracts is in fact determined by their difference of elevation, the traveller proceeding towards the interior of Persia rising, as it were, by successive steps from the low sandy plains adjoining the sea, to an elevation of more than 5000 feet in the table-land of the interior. Of this Strabo had, as usual, but an imperfect comprehension, from the want of any means of estimating altitudes above the sea, but the contrast of the different climates was too marked to escape observation. He notices also[7] the occurrence of numerous straits or narrow passes through these successive ranges of mountains, which had borne an important part in the operations of Alexander, who had insisted upon forcing his way through them, instead of contenting himself, as the

[6] xv. 3, § 1.

[7] xv. 3, § 6, p. 729.

Persian monarchs had done, with paying a sum of money to the mountaineers that guarded them.[8]

§ 24. His account of Susiana—the modern Khuzistan—is less satisfactory than that of Persia, especially with regard to the rivers which traversed the province, concerning which he found conflicting statements in his authorities, and had no means of reconciling them. There are indeed few problems in ancient geography more difficult than the determination and identification of the rivers of Susiana, which take their rise in the lofty ranges of Mount Zagros, and after traversing the fertile tracts of the plains, end in the marshy, muddy, alluvial tract that lines the whole extent of coast from the mouth of the Oroatis to that of the Euphrates. The difficulty arises not merely from the different, and apparently conflicting, statements of ancient authors, but from the changes in the country itself at the mouths of the rivers in question, which have been undoubtedly considerable, though we have no exact information as to their extent and nature. It is indeed only in very recent times that we have obtained anything like an accurate knowledge of the geography of Khuzistan; the site of Susa itself was long a subject of dispute,[9] and cannot be considered as having been established beyond a doubt till the excavations carried on in 1852 by Mr. Loftus at Sus or Shush, proved the identity of that locality with the celebrated city of which it retained the name, and brought to light the magnificent ruins of the palace of the Persian kings.[1] The determination of the site of the capital establishes beyond a doubt the identity of the celebrated river Choaspes with the modern Kherkah, which flows near the ruins of Susa, while the Pasitigris of Nearchus and Strabo may be identified with equal certainty with the river now called Karun or Kuran, which flows under

[8] See Chapter XII., Note I, p. 475.

[9] Susa was indeed correctly identified with the modern Sus or Shus by Major Rennell (*Geography of Herodotus*, pp. 203, 334): but Dr. Vincent returned to the opinion previously entertained that it occupied the site of the modern Shuster on the Karun (*Commerce and Navigation of the Ancients*, vol. i. p. 449).

[1] See Loftus's *Chaldæa and Susiana*, 8vo, Lond. 1857, chap. 24–31.

the walls of Shuster; but if these two conclusions be admitted, it becomes almost impossible to find a place for the Eulæus, which is described both by Strabo and other writers as one of the principal rivers of Susiana.[2] According to the statement of an author named Polycleitus,—one of the historians of Alexander the Great who is repeatedly cited by Strabo in this part of his work—the Choaspes, Eulæus, and Tigris, all flowed into the same lake, from which they had their common outflow to the sea. The existence of such a lake, which has been long filled up by the continual advance of alluvial deposits, is attested by several other writers, and appears to admit of no doubt.[3] It seems probable also that it communicated with the Euphrates, and received a portion of the waters of that river, though Strabo still regarded the main waters of the Euphrates as flowing into the sea by an independent channel.[4]

In the passage of Polycleitus just referred to, it seems almost certain that the river designated by him as the Eulæus was the same with the Pasitigris of Nearchus and Strabo, and other authorities represent the Eulæus as flowing into the Pasitigris, or *vice versâ*. On the other hand there are not wanting strong arguments for identifying the Eulæus with the Choaspes, which flowed by Susa, and which must have discharged its waters either into the Tigris or the lake at its mouth. It seems impossible to determine the question without supposing that the name of Eulæus was applied to one or the other of the two rivers known also as the Pasitigris and Choaspes; but

[2] The Karun in the upper part of its course receives a tributary, now known as the river of Dizful, nearly equal in volume to its eastern arm, which is apparently the Coprates of Strabo (xv. 3, p. 729), and of Diodorus (xix. 18), which the last author describes as falling into the Pasitigris.

[3] The existence of this lake is distinctly attested by Nearchus; but his statement concerning it is reported somewhat differently by Strabo and by Arrian, and the result is far from clear. He appears, however, to have sailed from Diridotis at the mouth of the Euphrates to that of the Pasitigris, and in so doing to have *passed by* the lake which received the waters of the Tigris. According to this account therefore it would seem that the Pasitigris did not in his time flow into the lake (Strabo, xv. 3, § 5, p. 729; Arrian, *Indica*, c. 42).

[4] This he distinctly states on the authority of Nearchus and Onesicritus, but (as has been already observed) it is by no means certain that they still did so *in his own day*.

even if this be admitted, we are still unable to reconcile the statements of ancient authors without supposing some of them to have confounded the two streams. It is indeed not strange that they should have done so, when we consider the extremely complicated nature of the water systems of these countries,[5] and that none of them, with the exception of Nearchus (whose statements we only possess at second hand) wrote from any personal knowledge of the localities.[6]

§ 25. Proceeding to the westward Strabo next describes the country which he terms Assyria, a name that he employs in a much more general sense than it is used by other authors, including not only the province east of the Tigris, to which the appellation was commonly confined, but the whole of Babylonia and Mesopotamia also; so that Assyria, according to his use of the term, comprised the whole extent of country from the chain of Mount Zagros on the east to the Euphrates on the west. It is still more singular that he should not even designate the province beyond the Tigris as Assyria properly so called, but while he gives the name of Aturia to the particular district in which Ninus or Nineveh was situated, he includes all the other provinces on the east of the Tigris in Babylonia, a name usually restricted to the region between the two rivers. The reason of this deviation from established usage is unknown to us; but it was probably connected with the historical confusion prevalent in his day, which regarded the Assyrian and Babylonian empires as identical.[7] He tells us indeed—and no doubt correctly—that the Syrians and Assyrians were in reality the same people, though the name

[5] A glance at one of the most recent maps, since this region has been really examined and surveyed, will suffice to show how impossible it must have been to comprehend its geography, without the assistance of any map at all.

[6] It is remarkable that no mention occurs in Strabo of Charax, which, according to Pliny, was one of the most important trading towns in this part of the country. The omission may in part be explained by the circumstance that Strabo seems to have made no use of the work of Isidore of Charax, which Pliny undoubtedly did; but it tends strongly to confirm the conclusion that Strabo had no other information concerning these countries than what he derived from Eratosthenes and the historians of Alexander.

[7] xvi. 1, p. 737.

of Syrians had come to be confined in the common usage of the Greeks to the people occupying the countries between the Euphrates and the Mediterranean.[8] The Cappadocians also, he adds, were originally the same race, and were still called in his time Leuco-Syrians or White Syrians; so that the same people had at one time extended from Babylonia to the shores of the Euxine.[9]

With the provinces which extended from the Euphrates eastward to Mount Zagros, the Greeks were well acquainted. They had remained under the Macedonian government after the death of Alexander for nearly two centuries; numerous cities had been founded in them by the Syrian monarchs, some of which had risen to great opulence and prosperity, and the whole country was traversed by frequented lines of commercial traffic. Hence Strabo must have had at his command ample materials for the description of these regions, and accordingly we find that his geographical account of them is clear, consistent, and intelligible, though not entering very much into detail. Of the great cities that had once rendered this region so celebrated, he tells us briefly that Nineveh had altogether disappeared, but adds (of course from mere tradition) that it was much larger than Babylon;[1] while of Babylon itself he gives a pretty full account, though he adds that the greater part of its site was desolate and uninhabited.[2] Its decay was mainly owing (as usual in such cases) to the rise of the neighbouring city of Seleucia, which had become a great emporium of trade, and was so populous and flourishing as to surpass even the metropolis of Syria, Antioch, and was the largest city in the East, after Alexandria in Egypt.[3] The Parthians had indeed transferred the royal residence to Ctesi-

[8] xvi. 1, § 1, p. 736.
[9] Ibid. § 2, p. 737.
[1] xvi. 1, § 3, p. 737.
[2] xvi. 1, § 5, p. 738. It is strange that he describes the walls of the city, and their vast height and extent, as if they were still standing in his time (τὸν δὲ κύκλον ἔχει τοῦ τείχους κ.τ.λ.). It is scarcely possible that this was the case; but he probably copied from Aristobulus or some other of the historians of Alexander, without any reference to subsequent changes.
[3] Ibid. See also xvi. 2, § 5, p. 750.

phon on the opposite bank of the Tigris, but this had not interfered with the prosperity of the commercial city, which was still regarded as the capital of all this part of Asia.[4]

In describing Mesopotamia Strabo is careful to point out the change that had taken place before his time in the transference of the customary passage of the Euphrates from Thapsacus, which, as we have seen, derived so much geographical importance from this circumstance in the days of Eratosthenes, to a place much higher up the Euphrates, which was called in consequence Zeugma or "the Bridge." This was situated just opposite to the modern town of Bir, which occupies the site of a Greek city called Apamea, founded by Seleucus Nicator,[5] and is still the usual place at which travellers proceeding from Antioch or Aleppo towards Bagdad cross the Euphrates. The change is one of great importance in tracing the routes given by ancient writers. There was also another passage much frequented in his time at Samosata in Commagene, where the line of route through Asia Minor, that he has given us from Artemidorus, crossed the Euphrates.[6]

§ 26. Syria was of course familiar to the Greeks from its having so long been the seat of empire of the Seleucidan dynasty, under whom it had attained to great opulence and prosperity. Hence we find the description of it in Strabo at once full and satisfactory. That of the Phœnician coast especially is so detailed that we might readily have supposed it to be derived from personal examination, were it not that an expression in his account of Tyre points to the opposite conclusion.[7] Yet his ideas concerning the interior, especially of Palestine, were in some respects strangely inaccurate. Thus, although he was

[4] xvi. 1, § 16, p. 743.

[5] Plin. *H. N.* v. 24, § 87. According to Pliny, Seleucus was also the founder of Zeugma, but it does not follow that the passage at Thapsacus was abandoned at so early a period.

[6] Strabo, xiv. 2, § 29, p. 654; xvi. 2, § 3, p. 749. Strabo himself appears to have been in some confusion between these two places of passage, which were in fact 72 Roman miles apart (Plin. *l. c.*). The one was the most convenient for travellers from Antioch, the other for those coming from Asia Minor.

[7] ἐνταῦθα δέ φασι πολυστέγους τὰς οἰκίας, ὥστε καὶ τῶν ἐν Ῥώμῃ μᾶλλον. xvi. 2, § 23. See note to p. 212.

acquainted both with the Lake of Gennesareth and the Dead Sea, of which last and its natural peculiarities he gives a full description (taken apparently from Posidonius), he by a strange mistake confounds it with the Sirbonian Lake or Marsh, on the frontiers of Palestine and Egypt. At the same time he distinctly connects its peculiar character with the other signs of volcanic action observable in the country, and adds that "according to the traditions of the natives" it had been formed by a catastrophe which had overwhelmed thirteen cities, of which Sodoma was the capital, the greater part of which had been swallowed up in the lake.[8] By another not less singular error, he supposes the Jordan, which he justly terms the largest river of this part of Syria, to flow into the Mediterranean (!); and even tells us that it was habitually navigated upwards from that sea.[9] At the same time he correctly describes the river that flowed by Damascus (the Chrysorrhoas) as being for the most part absorbed by canals for irrigation,[1] and even notices the *two* peculiar rugged regions, which gave name to the district of Trachonitis, east of the Jordan.[2] Of the natural productions of Judæa, besides the asphalt of the Dead Sea, he dwells especially upon the palm-groves of Jericho, and the balsam grown there, as well as on the banks of the Lake of Gennesareth.[3]

In describing Jerusalem he speaks principally of the great strength of the city as a fortress: a circumstance which had been brought prominently forward on occasion of its siege and capture by Pompey. It was this event which had especially directed the attention of the Greek and Roman world to the

[8] xvi. 2, § 44, p. 764.

[9] xvi. 2, § 16, p. 755. τὸν δὲ Λύκον καὶ τὸν Ἰορδάνην ἀναπλέουσι φορτίοις, Ἀράδιοι δὲ μάλιστα. The mention of the Lycus, a very trifling stream, while no notice is found of the much more considerable river Leontes, that flows into the sea N. of Tyre, is calculated to raise a suspicion that Strabo has confounded the latter river with the Jordan.

[1] Ibid. § 16, p. 755.

[2] Ibid. p. 756. ὑπέρκεινται δ' αὐτῆς (τῆς Δαμασκοῦ) δι' ὀ λεγόμενοι Τράχωνες. It is only quite of late years that modern travellers have become well acquainted with this singular region, and have recognised the fact that it is really composed of two distinct mountain tracts of the same singular character, the Lejah and the Jebel Hauran.

[3] Ibid. § 41, p. 763.

sacred city of the Jews, and Strabo was probably indebted for the materials of this part of his work to Posidonius, who had written the history of the campaigns of Pompey. It was perhaps from the same source that he derived the curious summary that he has given us of the traditions and rites of the Jews, the institution of which he ascribes to Moses, an Egyptian priest, who came thither out of Egypt, and founded the temple on a rocky and barren site, which was on that account neglected by the neighbouring tribes.[4] As Posidonius was himself a native of Apamea in northern Syria, it is highly probable that he was one of Strabo's chief authorities throughout his description of that country.

The whole of the desert tract extending from the confines of Cœle Syria and Judæa to the Euphrates is assigned by Strabo to Arabia, and was inhabited only by wandering tribes, whom he called Scenitæ from their dwelling in tents. It is strange that he has omitted all mention in this place of the one important exception in the case of Palmyra, which was certainly at this period a flourishing city and emporium of trade, and to which attention had lately been directed by the attempt of M. Antony to plunder it of the wealth which its citizens had thus accumulated.[5]

§ 27. Of the great Arabian peninsula he has given a long account, probably the most complete that had as yet been brought together. The greater part of it was indeed derived from sources with which we are already acquainted. Thus he begins[6] with a general description of the peninsula and the nations that inhabited it, according to Eratosthenes, who, as we have seen,[7] was the first to bring together any satisfactory information concerning this country. He next follows this up with a long extract from Artemidorus, describing in detail both shores of the Red Sea, or Arabian Gulf, as it was termed by the Greeks: an account which we know to have been

[4] Ibid. §§ 35–37, pp. 760–762.
[5] Appian, *B. C.* v. 9. See Chapter XIX. p. 134.
[6] Strabo, xvi. 4, §§ 2–4.
[7] See Chapter XVI. p. 646.

derived by Artemidorus from the earlier treatise of his contemporary Agatharchides, and which has already been fully examined.[8] It is remarkable that notwithstanding the great increase in the trade to India, which had taken place in the days of Strabo, he had obtained no additional information concerning the coasts of the Indian Ocean, either on the African or Arabian side. He still regards the Noti Keras or Southern Horn (Cape Guardafui), as the extreme limit of knowledge on the one side, and while he describes in general terms the land of the Sabæans and the Chatramotitæ in the south of Arabia, he gives no details either of distances or of the natural features of the coast outside of the Straits of Bab-el-Mandeb. It is evident that the outer coast of Arabia was still practically unknown to geographers.[9]

But with regard to the interior of the country Strabo had a new source of information, unknown to any of his predecessors, in the recent expedition of Ælius Gallus, the details of which have been already given.[1] Unfortunately, as we have seen, the circumstances of this expedition were such as in great measure to prevent it from throwing the light that might have been expected upon the geography of the regions that were traversed by the Roman general, and we are almost wholly unable to trace his line of route, or determine the limit to which he advanced. It is evident that Strabo was himself very much in the same position: he had no means of connecting the localities of which he learnt the names from the Romans who had accompanied Gallus with those described by the earlier Greek geographers, and he makes no attempt to do so. The manner in which he defines the position of Marsiaba (the turning-point of the expedition) as being *said* to be only two days' journey from "the Land of Spices," is certainly not calculated to give any trustworthy information. It is clear

[8] See Chapter XVIII. sect. 3.

[9] The absence of all notice of so remarkable a natural feature as the isolated mountain promontory of Aden is a strong evidence of this.

[1] See Chapter XX. p. 179, foll.

that he at least had no idea of identifying it, as has been done by so many modern writers, with the celebrated city of Mariaba, the capital of the Sabæans, which was well known to him from Eratosthenes and from Artemidorus.[2]

With regard to the distances from one point to another of the peninsula, which necessarily determined its form, Strabo adds nothing to the information already obtained by Eratosthenes, concerning the time employed by caravans from the distant provinces to Petra and Gerrha,[3] which still continued to be the two great emporiums of the trade of Arabia. In like manner his account of the eastern coast of Arabia, and the configuration of the Persian Gulf, is derived exclusively from Eratosthenes, who had himself drawn his materials from the voyage of Nearchus, and that of Androsthenes of Thasos, which has been already noticed.[4] So little progress had been made in real geographical knowledge during a period of more than three centuries with respect to a country so close to Alexandria! Both Eratosthenes and Strabo had an exaggerated idea of the size of the Persian Gulf, which they supposed to be nearly as large as the Euxine.[5]

SECTION 2.—*Africa.*

§ 1. The seventeenth and last book of Strabo's great work is devoted to Africa, and fully two-thirds of it are occupied with the description of Egypt. Here there was of course no room for the extension of geographical knowledge, that country having been familiarly known to the Greeks from an early period, while the Alexandrian writers had doubtless possessed the amplest materials for a full statistical and topographical account of it. Moreover Strabo himself, as we have seen, had not only visited Egypt, and ascended the Nile as far as the

[2] xvi. 4, § 2, p. 768; § 19, p. 778.
[3] Ibid. p. 778. See Chapter XVI. p. 647.
[4] Chapter XII. p. 461.
[5] Strabo, xvi. 3, § 2, p. 766. *ὥστε δῆλον ἐκ τούτων εἶναι, διότι μικρὸν ἀπολείπεται τῷ μεγέθει τῆς κατὰ τὸν Εὔξεινον θαλάττης αὕτη ἡ θάλαττα.*

First Cataract, but he had resided for a considerable time at Alexandria, and had thus every means of obtaining the best information. At the same time the physical peculiarities of the country are so strongly marked, and its geographical characters at once so extraordinary and so simple, that it was hardly possible to fail to seize them. He aptly compares the inhabited part of Egypt above the Delta, which as he justly remarks was merely the valley of the Nile, to a narrow band stretched out lengthwise, extending about 4000 stadia in length, by an average breadth rarely exceeding 300 stadia.[6] He describes with considerable minuteness the Delta itself, as well as the different mouths of the Nile, of which the most important in his day were the Canopic and the Pelusian, and next to them the Phatnitic, which was nearly midway between the other two main arms.[7] He gives also a graphic description of the inundation of the Nile, and the appearance of the low country under these circumstances. With regard to the cause of the inundation, which had been a subject of so much discussion and curiosity among the early Greeks, he tells us that it was in his day well known to be produced by the heavy rains that fell in the summer on the mountains of Upper Ethiopia; a cause which, he observes, had been long suspected by the earlier philosophers, but had been afterwards ascertained to be true by personal observation,[8] especially by the expeditions sent by Ptolemy Philadelphus into these remote regions for the capture of elephants. The real difficulty, as he justly adds, was not to account for these copious rains in that region, but for their entire absence in the Thebaïd and neighbourhood of Syene.[9]

[6] xvii. 1, § 4, p. 789.

[7] xvii. 1, § 18, p. 801. The Phatnitic mouth is the one now known as that of Damietta, from the town of that name. It is still one of the principal mouths of the river.

[8] Οἱ μὲν οὖν ἀρχαῖοι στοχασμῷ τὸ πλέον, οἱ δ' ὕστερον αὐτόπται γενηθέντες ᾔσθοντο ὑπὸ ὄμβρων θερινῶν πληρούμενον τὸν Νεῖλον, etc. xvii. 1, § 5, p. 789.

[9] Ibid. p. 790. He here refers to two works specially devoted to the Nile, one by Eudorus, the other by a Peripatetic philosopher of the name of Ariston. Both authors are otherwise totally unknown. According to Strabo the one treatise was copied almost entirely from the other, but he was not clear which was the plagiarist.

His description of the voyage up the Nile is especially interesting, as being derived principally from his own personal observations. He saw the ruins of Thebes, which already in his time had ceased to exist as a city,[1] and was merely occupied by a group of villages, with the vast ruins of temples and other sacred edifices spreading over a space of 80 stadia in extent. Among these he especially notices the celebrated vocal statue of Memnon, the sound proceeding from which he himself attests that he heard, but expresses a very sound scepticism as to how it was produced. He was at this time travelling in company with Ælius Gallus, the Roman governor, and the whole party were no doubt duly *lionized* wherever they went.[2] They ascended the river as far as Syene, saw the Nilometer there, and the well down which the sun shone vertically at the summer solstice, and then proceeded by land to a point above the First Cataract, whence they visited the island of Philæ.[3] This was the term of their expedition, as it is still that of most modern travellers. They appear also to have visited the Lake Mœris, and the celebrated Labyrinth, which Strabo calls a work equal to the Pyramids. He describes only from hearsay the important commercial route that had been opened by the first Ptolemies from Coptos to Berenice on the Red Sea, but which had been in his day superseded by that to Myos Hormus, which had become the principal emporium of trade with Arabia and India.[4]

[1] It had been destroyed in B.C. 86 by Ptolemy Lathyrus who, according to Pausanias (i. 9, § 3), reduced it so completely to ruin, as to leave no trace of its former wealth and prosperity. This is of course a great exaggeration. Strabo more correctly says: "The remains of its former greatness are still shown, extending for a space of 80 stadia: most of them are buildings of a religious character. It is now inhabited only in scattered villages; one part in Arabia (i.e. on the right bank of the Nile), where the city was; another on the opposite side, where stood the Memnonium" (xvii. p. 816).

[2] They were attended by a professional ἐξηγητής, or interpreter (a sort of upper *laquais de place*) who professed not only to be acquainted with the monuments, but to be able to explain the inscriptions and hieroglyphics; but he was ridiculed as an impostor by the governor's suite, whether with or without reason we have no means of judging (Strabo, xvii. 1, § 29, p. 806). Not long after the time of Strabo the monuments of Thebes were visited by Germanicus, to whom the inscriptions were interpreted by one of the chief priests (Tacit. *Annal.* ii. 60).

[3] Strabo, xvii. 1, §§ 48–50.

[4] Ibid. § 45, p. 815.

§ 2. Another point on which his testimony is curious, is with regard to the canal that traversed the Isthmus of Suez, and had its outlet at the city of Arsinoë at the head of the Arabian Gulf.[5] This did not, like the one recently constructed, proceed directly across the Isthmus, but quitted the Nile, by which it was supplied with water, at a place called Phaccusa on the Pelusian branch, traversed the Bitter Lakes and entered the sea at Arsinoë, but was provided with locks at its mouth, so as to exclude the sea-water, and hence not only were its waters perfectly fresh, but the Bitter Lakes were rendered so by their admixture. The canal itself was 100 cubits (150 feet) in width, and deep enough to admit of the passage of ships of the largest burden.[6] The object of this great work had obviously been to conduct the commerce of the Red Sea direct to Alexandria, but the difficulties of the navigation of the upper part of that sea had prevented this route from being generally adopted, and, as has been just mentioned, the Arabian and Indian trade in the days of Strabo passed by way of Myos Hormus to Coptos on the Nile, and thence down the river to Alexandria.

§ 3. With regard to that trade Strabo has given some interesting information, which he probably collected at Coptos. Comparing the commerce of Alexandria in his day with what it had been under the Ptolemies, he tells us that in former times not twenty ships in a year ventured to traverse the Arabian Gulf, so as to show themselves beyond the Straits: but in his time *large fleets made voyages to India and the extremities of Ethiopia*,[7] and brought back from thence cargoes of the most valuable merchandise, which contributed twofold

[5] Strabo, xvii. 1, § 26, p. 805.

[6] *βάθος δ' ὅσον ἀρκεῖν μυριοφόρῳ νηί*, Ibid. This same expression, "a ship capable of carrying 10,000 amphoræ," is used also by Strabo in speaking of the mouth of the Tagus (iv. p. 151), and is evidently intended to designate a ship of the largest class. (See Thucydides, vii. 25; and Lobeck's note on Phrynichus, p. 662.) The course of this canal must have in great measure coincided with the Sweet Waters Canal, recently opened in connection with that of Suez.

[7] *πρότερον μέν γε οὐδ' εἴκοσι πλοῖα ἐθάρρει τὸν Ἀράβιον κόλπον διαπερᾶν, ὥστε ἔξω τῶν στενῶν ὑπερκύπτειν, νῦν δὲ καὶ στόλοι μεγάλοι στέλλονται μέχρι τῆς Ἰνδικῆς καὶ τῶν ἄκρων τῶν Αἰθιοπικῶν.* xvii. 1, § 13, p. 798.

to the revenue by paying import duties on its entrance into Egypt, and again export duties when sent out from Alexandria. That city had in fact a monopoly of these costly wares, so that other countries were compelled to derive them from thence.[8] In another passage he states the number of ships sailing from Myos Hormus to India at not less than a hundred and twenty.[9]

But so imperfect was the statistical information that he was able to collect, notwithstanding his intimate association with Ælius Gallus, that when he wishes to give some idea of the revenues actually derived from these sources of wealth, he goes back to a speech of Cicero's, in which that orator estimates the annual revenue of Egypt in the time of Ptolemy Auletes at 12,500 talents: and then adds, if such was the income under the government of such worthless rulers as the last of the Ptolemies, what must it have become in the prosperous condition to which it had attained under its Roman governors?[1] It is remarkable also that though he gives us many interesting particulars with regard to the provincial administration of Egypt, its division into nomes, the military force maintained there by the Romans, &c., he has nowhere given us any hint of the estimated population either of the country itself, or of the city of Alexandria,[2] of which in other respects he has given a full and minute description.

Prosperous as Egypt was in general, many of the famous ancient cities had already fallen into decay. Thebes, as we have seen, lay in ruins, while a modern city, Ptolemaïs, had become the capital of the Thebaïd, and was the third city of

[8] Ibid. The commercial position of Alexandria at this time must have closely resembled that of Venice in the middle ages.

[9] ii. 5, § 12, p. 118. He here also uses the expression of whole fleets sailing to India (*τῶν ἐκ τῆς Ἀλεξανδρείας ἐμπόρων στόλοις ἤδη πλεόντων διὰ τοῦ Νείλου καὶ τοῦ Ἀραβίου κόλπου μέχρι τῆς Ἰνδικῆς*).

[1] xvii. 1, p. 798.

[2] This omission is fortunately supplied by Diodorus (xvii. 52), who tells us that the population of Alexandria amounted to 300,000 free souls; while he roughly estimates the total population of Egypt in his day at not less than seven millions (i. 31, with Wesseling's note, showing that this is the true meaning of the passage). Josephus, about half a century later, gives the population of Egypt at 7,500,000 people, *exclusive* of Alexandria (Joseph. *B. Jud.* ii. 16, § 4), a statement which he professes to derive from official documents.

Egypt in point of population.[3] Memphis retained the second place, and was still a great and flourishing city, but the royal palace there was in ruins, and the Serapeum was already half buried in sand.[4] Heliopolis was altogether deserted, while Abydos, the sacred city of Osiris, and at one time one of the most important cities of Egypt, had sunk into a mere village.[5]

§ 4. Strabo is the first extant writer who distinctly notices the Oases, those remarkable features of the geography of the Libyan desert, of which Herodotus, as we have seen, had but an indistinct idea. He describes them briefly, but very correctly, as inhabited districts, surrounded on all sides by vast deserts, just as islands are by the sea.[6] There were three of them (he adds) in the immediate neighbourhood of Egypt; the first (that now called the Great Oasis) opposite to Abydos, from which it was distant seven days' journey through the desert; the second (the Lesser Oasis), opposite to the Lake Mœris; the third that adjoining the Temple of Ammon, so celebrated for its oracle, which had however fallen into neglect in the days of Strabo.[7] The position of this last he fixes at five days' journey south of Parætonium on the Libyan coast.[8]

He closes this account of Egypt—on the whole one of the most complete and satisfactory portions of his work—with a brief notice of the campaign of the Roman general Petronius against the Ethiopians, which has been already discussed.[9] His account of that people in general is derived partly from Eratosthenes, partly from Artemidorus, who, as we have seen, was in this part of his work a mere copyer of Agatharchides, and described the different wild tribes in the interior, in connexion with the ports of the Red Sea, from which the explorers sent out by the Ptolemies had visited them.[1] But of Meroë itself and

[3] xvii. 1, § 42, p. 813.
[4] Ibid. § 31, 32, p. 807.
[5] Ibid. § 27, p. 805, § 42, p. 813.
[6] xvii. 1, § 5, p. 791.
[7] Ibid. §§ 42, 43, p. 813.
[8] Ibid. § 14, p. 799.
[9] See Chapter XX. p. 182.
[1] This part of the description of Ethiopia is given by Strabo in his sixteenth book, where he describes both shores of the Red Sea, according to Artemidorus (xvi. 4, §§ 5–18). It has been already pointed out that this agrees almost entirely with that given by Agatharchides (Chapter XVIII. p. 62).

the comparatively civilized people of which it was the capital Strabo gives a pretty full account, derived probably from information collected by the Romans during the expedition to which we have just referred.[2] With regard to the Upper Nile and its tributaries he had no information beyond that collected by Eratosthenes, and contents himself with copying, or at least giving the substance of, that given by the earlier geographer.[3] But it is singular that he notices the existence of a large lake above Meroë, named Psebo, containing an island which had a considerable population,[4] a statement that can hardly refer to any other than the Lake Tzana or Dembea in the heart of Abyssinia, which is the source of the Blue Nile—yet he does not appear to have any idea of its connexion with the Nile. In the passage elsewhere extracted from Eratosthenes indeed he refers to the notion, somewhat vaguely reported, that the main and direct stream of the Nile flowed *from certain lakes* to the south; but it seems probable that this really related only to the expanse of marshy waters formed by the White Nile in its course above its junction with the Sobat.[5]

§ 5. With regard to the rest of Africa, Strabo had surprisingly little to add to the knowledge already possessed by Eratosthenes. His conception of the form of the continent did not differ materially from that of the Alexandrian geographer. He describes it as in a general way resembling a right-angled triangle, having for its base the sea-coast extending from Egypt to the Pillars of Hercules; the shorter side perpendicular to this being formed by the Nile up to Ethiopia, and by a line artificially produced from thence to the southern

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[2] xvii. 2, §§ 2, 3.

[3] xvii. 1, § 2. This passage has been already examined in the chapter on Eratosthenes, Chapter XVI. p. 650.

[4] Ibid. § 3. *ὑπέρκειται δὲ τῆς Μερόης ἡ Ψεβώ, λίμνη μεγάλη νῆσον ἔχουσα οἰκουμένην ἱκανῶς.* This is the first mention of a lake of the name. But as we have seen, Agatharchides described the torrents flowing into the Red Sea, as rising in the Psebœan mountains (§ 84), a name by which he evidently meant to designate the mountains of Abyssinia, in which the Lake Tzana is situated.

[5] More definite information concerning these, as we shall see, was first acquired in the reign of Nero; but it is not improbable that an obscure notion of them had already reached Alexandria in the time of Eratosthenes.

Ocean; while the hypothenuse was constituted by the shore of the Ocean, extending the whole way from the land of the Ethiopians to the extremity of Mauretania.[6] We see here that Strabo *assumed*, as had been the case with almost all geographers since the time of Eratosthenes,[7] that the southern shores of Libya were surrounded by a circumfluent ocean; but having no real information upon the subject, and no conception of the vast extension of the African continent towards the south, he naturally drew the line at no great distance beyond the limit of the known regions, so as to connect the farthest points actually known to him, and thus reduced the continent of Africa to less than a third of its real dimensions. He himself tells us indeed that the southern extremity of the triangle was wholly unknown, being unapproachable, or at least having never been visited, on account of the burning heat, and that it was merely by conjecture that he placed the limit of the inhabited world in this direction about 3000 stadia to the south of Meroë,[8] while he assumed without any kind of proof that the line of the southern coast was not more than 1000 stadia further south. He thus arrived at the conclusion that the greatest breadth of the Libyan continent was about 13,000 or 14,000 stadia; and its length, from Alexandria to the Straits, somewhat less than double.[9]

§ 6. He begins the description of Libya, in the sense in which he conceives the term (*i. e.* as excluding Egypt) with its western extremity, or Mauretania; a land which he justly describes as rich and fertile, and containing many valuable natural productions—among others the beautiful wood which supplied the celebrated tables so much sought after by the Romans in his time.[1] Notwithstanding this, the inhabitants

[6] xvii. 3, § 1.

[7] The two exceptions, as we have seen, were Hipparchus and Polybius. See Chapter XVII.

[8] It is strange, at all events, that he should have drawn the conjectural line so immediately beyond the limits of the known regions. He had himself placed the Sembritæ on the Upper Nile 3000 stadia south of Meroë, yet he here assumes the southern limit of Africa to be only 3000 or 4000 stadia beyond Meroë.

[9] Ibid.

[1] xvii. 3, § 4, p. 826.

were still very uncivilized, and led for the most part the life of mere nomads. He dwells at some length upon the wild animals with which the country abounded,[2] and assures us that besides lions, panthers, and other wild beasts it produced abundance of elephants, and the rivers contained crocodiles similar to those in the Nile.[3] It was apparently this circumstance that had given rise to the absurd notion (adopted and developed, as we have seen, by Juba)[4] that the Nile really took its rise in the mountains of Mauretania.

It is singular that Strabo never alludes to the work of Juba, of which he appears to have been totally ignorant, though it certainly contained the best and fullest information concerning Africa that was available in his time. Many of his statements indeed concerning the wild animals and natural productions of Africa, coincide with those cited by Pliny from the work of the Numidian monarch; but these had been doubtless mentioned by other writers also. The only authority referred to *by name* is Iphicrates, an author otherwise unknown. Concerning the western coast of Mauretania he had evidently very little knowledge, and tells us that the subject had been so much disfigured by fables, that it was difficult to know upon what information to rely. He mentions, though not without an expression of doubt, the number of colonies that the Carthaginians were said to have established on this coast, of which (he says) not a trace remained.[5] Their number, which was reported at three hundred (!) was certainly a great exaggeration; but there is no reason whatever to doubt the fact that such colonies, or trading stations, had been established outside

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[2] Ibid. §§ 4, 5, pp. 826, 827.

[3] xvii. p. 826, 827. Camelopards also were mentioned by an author named Iphicrates, as being found in the land of the Western Ethiopians which adjoined the Atlantic, as well as animals that he calls ῥίζεις, a name otherwise unknown.

[4] See Chapter XX. p. 174.

[5] Φοινικικὰς δὲ πόλεις παμπόλλας τινάς, ὧν οὐδὲν ἰδεῖν ἐστιν ἴχνος. xvii. 3, § 8. This statement is taken from Artemidorus, who censured Eratosthenes for having believed in their existence. It is very strange that Strabo never refers in this part of his work to the voyage of Polybius along this western or Atlantic coast of Africa (see Chapter XVII. p. 32). On such a point as this, for instance, his testimony would have been conclusive.

the Straits of the Columns for a considerable distance along the western coast of Africa. In Strabo's time there appears to have been no permanent settlement (or at least he knew of none) further south than Lixus, the modern El Araish, only about 40 G. miles south of Cape Spartel.[6]

§ 7. The name of Mount Atlas was of course long familiar to the Greeks as that of the mountain range so conspicuous as one sailed through the Straits; and Strabo was well aware that the same range was prolonged through the whole extent of Mauretania, and in a certain sense as far even as the Syrtes.[7] Beyond this first, or coast, range dwelt the Gætulians, whom he describes as the greatest people in Africa, comprehending obviously under that name all the different but cognate tribes, which under the name of Berbers, Tuaricks, and other appellations, actually extend from the neighbourhood of the Atlantic to the borders of Cyrenaïca. All the Libyan tribes indeed, as he expressly tells us, resembled one another in their dress and habits of life, which were in great measure the same with those of the Moors and Numidians.[8]

Farther inland were situated two nations to which he gives the names of Pharusians and Nigretes, or Nigritæ, who adjoined the Western Ethiopians, with whom they appear to have had something in common.[9] But he gives us no further clue to

[6] Even with regard to this, his statements are strangely confused; he has certainly confounded the Lixus of Eratosthenes, which was called Linx by Artemidorus, with Tingis, the modern Tangier, which was situated, as he correctly tells us, very near to the Promontory of Cotis (Cape Spartel). Hence he places it *opposite* (*ἀντίπορθμον*) to Gades, the distance between them being 800 stadia (80 G. miles), about the same, he adds, as the distance of each from the Straits (xvii. 3, § 2). All this is strangely inaccurate, and shows that he had no trustworthy information at all, as to distances, even concerning the immediate neighbourhood of the Straits.

[7] xvii. pp. 825–827. He tells us that Atlas was the Greek name for the mountain that was seen on the left hand on passing through the Straits; but the native name was Dyris (*Δύρις*). He subsequently adds that the same range of mountains extended from Cotes to the frontier of the Massæsyli; and afterwards (p. 829) states that the mountain district in the interior was prolonged as far as the Syrtes. But he does not attempt any description of the mountain range, which was doubtless very little explored.

[8] xvii. 3, § 7, p. 828. He throughout calls the inhabitants of Mauretania Maurusians (*Μαυρούσιοι*), a name apparently adopted by the Greeks as equivalent to the Latin Mauri.

[9] Ibid.

their geographical position; except that they were clearly separated from the settled portions of Mauretania and Numidia by a considerable extent of desert, as he describes them as occasionally visiting those countries, "crossing the desert with skins full of water hung under the bellies of their horses." It is probable therefore that the tribes thus designated were really situated to the south of the Great Desert or Sahara. This is confirmed by the mention of their country being subject (like the south of Ethiopia) to tropical summer rains.[1] But Strabo's own idea of their position was evidently extremely vague. In another passage he tells us that it was these same tribes that had destroyed the Carthaginian colonies on the west coast; and that they were situated thirty days' journey from Lixus.[2]

§ 8. Of the countries bordering on the Mediterranean, Mauretania Cæsariensis and Numidia, Strabo's account is very brief and perfunctory. He appears to have had but little information concerning them, and does not even allude to the numerous colonies which, as we learn from Pliny, had been settled along this line of coast by Augustus, and must therefore have been already in existence when Strabo wrote. Even of the province of Africa, comprising the immediate territory of Carthage, his description, though correct, is succinct and summary. This province, as well as the adjacent Numidia, had suffered severely in successive wars, and the period of the great wealth and prosperity, to which it attained under the Roman Empire, does not appear to have yet begun. But the new colony founded by Julius Cæsar on the site of Carthage was already rising rapidly into importance, and was become the most populous city in Africa.[3]

He describes in considerable detail the coast from Carthage to the Cyrenaïca, with the two Syrtes, and the islands of Cercina and Meninx—the latter of which, he tells us, was

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[1] λέγεται δὲ κἀνταῦθα τοὺς θερινοὺς ὄμβρους ἐπιπολάζειν. Ibid. p. 828.

[2] Ibid. § 3, p. 826.

[3] xvii. 3, § 15, p. 833.

generally believed to be the land of the Lotophagi, described by Homer.[4] It in fact abounded with the tree bearing a sweet fruit, to which the Greeks gave the name of Lotus. For this information he was probably indebted to Polybius, who, as we have seen, had conducted an exploring voyage along this coast of Africa;[5] and it is not improbable that the same writer was his chief authority for his description of this coast in general. But it is curious, and characteristic of the sort of geographical knowledge possessed by the Greeks, even at this period, that while his details of the *paraplus* are in general very correct, and his distances at least fairly accurate, he was still so ignorant of the general form and configuration of the coast, as to have no clear conception of the great projection formed by the Carthaginian territory, and the deep bay to the east of it. Hence he tells us that Automala, a port in the innermost bight of the Great Syrtis, was on a parallel of latitude about 1000 stadia south of Alexandria, and less than 2000 south of Carthage.[6] The first statement is not very far from correct, while the difference between the parallel in question and that of Carthage is not less than six degrees and a half of latitude, or 3900 stadia! Yet his account of the Great Syrtis itself is very fairly accurate, and free from the gross exaggerations which had been accumulated by earlier writers.

§ 9. Of the Cyrenaïca he gives a pretty full, and very correct, account. With the coast of this region he was acquainted by personal observation, as he distinctly tells us that he had seen the city of Cyrene from the sea.[7] This must probably have been on his voyage from Italy or Sicily to Alexandria. He states also that from a headland named Phycus (now Ras Sem) near Cyrene, which was the most northerly point of this coast, to Cape Tænarus (Matapan) in the Peloponnese was 2800 stadia; a remarkably correct estimate, which

[4] xvii. 3, § 17, p. 834.
[5] See Chapter XVII. p. 32.
[6] xvii. 3, § 20, p. 836.
[7] Ibid. p. 837.

affords us valuable assistance in constructing his map of the Mediterranean.[8]

The region producing the *silphium*, for which Cyrene had so long been famous, was situated immediately beyond the inhabited district, towards the interior; it was a barren tract extending about 1000 stadia in length by 300 in breadth.[9] The interior beyond this was inhabited by the Marmaridæ, a nomad tribe who extended as far as the Oasis of Ammon. Strabo was acquainted also with the Oasis of Augila,[1] which he places at four days' journey to the south-east of Automala, and correctly describes as resembling that of Ammon, having good water and abundance of palm-trees. But of the native tribes his knowledge was evidently very imperfect; he mentions the Nasamones and Psylli as dwelling around the Great Syrtis; and elsewhere notices the Garamantes as occupying the interior beyond the Gætulians. He adds that they were distant about nine or ten days' journey from the Ethiopians on the Ocean, and fifteen from the Oasis of Ammon.[2] It is strange that he makes no allusion to the recent expedition of Balbus into their country, or to the more definite information which he had brought back from thence.

It is to the credit of Strabo, and in accordance with that soberness of judgment which in general distinguishes him, that he does not attempt, in the absence of authentic information concerning the interior of Africa, to supply the deficiency by repeating the fables which had been so long current in regard to this part of the world, and which still

[8] Ibid. p. 837.

[9] Ibid. § 22, p. 837; § 23, p. 839. He tells us that the silphium had at one time been very nearly extirpated by the barbarians. The limited area to which it was confined may account for its disappearance, or rather degeneracy, at the present day. See on this subject Barth, *Wanderungen*, pp. 410, 468.

[1] xvii. § 23, p. 838. The name had fallen out of our MSS., but has without doubt been correctly restored by recent editors. (See Kramer's note.)

[2] xvii. 3, § 19, p. 835. His conception of the Garamantes seems to have been that of a nation extending for a long distance from E. to W., to the south of the Gætulians, and consequently farther in the interior. But he had evidently no definite idea of their locality. The statement that they were not more than ten days' journey from the Ethiopians on the Ocean, is wholly unintelligible.

continued to find their place long after in the works of Roman writers. It is more singular that he has omitted in the description of Africa all notice of those Islands of the Blest, or Fortunate Islands, to the existence of which not far from the coast of Mauretania he has incidentally alluded in the earlier part of his work.[3] This circumstance alone would be sufficient to show that he had not made use of the work of Juba, who, as we have seen, had collected a considerable amount of information in regard to them.

§ 10. But if we are surprised to find that Strabo had failed to avail himself of valuable works that had certainly been published at the time when he wrote his geography, our wonder may well be diminished when we find (as has been already mentioned) that his own great work remained unknown to most of his successors. His name is not even noticed among the multifarious writers cited by the all-compiling Pliny; nor is any allusion to it found in the great work of Ptolemy. His geographical treatise forms indeed so important an era to ourselves in estimating the progress of geography that we find it difficult to believe that it did not assume an equally important part in the eyes of his contemporaries and their immediate successors. But the silence of Pliny, half a century afterwards, is conclusive evidence that this was not the case. If his great work was written (as is generally supposed) at his native place of Amasia, in a remote province of Asia, and completed only a short time before his death, this might in some measure account for the tardy recognition of its merits. But it could hardly have failed to find its way to Alexandria, where he had himself studied, and which was still in great measure the centre of learning to all the Hellenic world.

It was certainly in the hands of the learned as early as the time of Athenæus (about the beginning of the third century),

[3] iii. 150. *Μακάρων τινὰς νήσους κατονομάζοντες ἃς καὶ νῦν δεικνυμένας ἴσμεν | οὐ πολὺ ἀποθεν τῶν ἄκρων τῆς Μαυρουσίας τῶν ἀντικειμένων τοῖς Γαδείροις.*

who refers to it in two passages,[4] neither of them having any direct bearing on geography: but its geographical importance is for the first time recognized by Marcianus of Heraclea—a writer who cannot be placed earlier than the third century—who mentions Strabo, in conjunction with Artemidorus and Menippus of Pergamus, as one of the authorities most to be relied on with respect to distances.[5] With this exception we find hardly any reference to it till the time of Stephanus of Byzantium, towards the end of the fifth century, by whom it is frequently cited. Among the later grammarians of the Byzantine times on the contrary it enjoyed a high reputation, and is continually referred to by Eustathius, who even calls Strabo *the* geographer (ὁ γεωγράφος) *par excellence*, notwithstanding the commanding position then occupied by Ptolemy.[6] It is certain that if we regard the science of geography as including all its branches, historical, political, physical and mathematical—there is no other writer upon the subject in ancient times that can compare with Strabo.

[4] Athenæus, iii. p. 121; xiv. p. 657. It is remarkable that his *historical* work, which was subsequently forgotten, is repeatedly cited at an earlier period, both by Josephus (*Ant. Jud.* xiv. 7, § 2), and by Plutarch (*Sylla*, c. 26, *Lucullus*, c. 28).

[5] Marciani *Epit.* § 3.

[6] The existence of two different Epitomes, compiled independently of each other, of the great work, both of which have been preserved to us, and are of considerable use in correcting and confirming the original text, is an additional proof of the popularity of his work in the middle ages. One of these dates from the tenth century, and is therefore considerably older than any of our existing MSS. of Strabo. The other, though preserved only in a MS. of the 14th century, is also of considerable value. (See Kramer's *Præfatio*, p. xlii.)

But notwithstanding these aids, the defective character of our MSS., and the frequent corruptions of the text, which it is impossible for us now to rectify, are a source of continual embarrassment and regret to the student of ancient geography.

NOTE A, p. 296.

CHALYBES.

THE Chalybes or Chalybians were a people of Asia Minor whose name was certainly familiar to the Greeks from an early period. They appear in the *Prometheus* of Æschylus (v. 715) as σιδηροτέκτονες, or workers in iron: and Herodotus notices them among the nations subdued by Crœsus (i. 28). They are here introduced as if they dwelt *within* (i.e. to the west of) the Halys: but this may be only a slight inaccuracy of expression, and there seems no doubt that they were really situated to the east of that river. Apollonius Rhodius, who on a point of this sort probably followed good geographical authorities, placed them beyond the Thermodon, the reputed abode of the Amazons, and next to the Tibarenians (*Argonaut.* ii. v. 1000–1008). Dionysius Periegetes, who assigns them the same position (v. 768–771), probably followed Apollonius. Strabo also associates the Chaldæans (whom he distinctly identifies with the people formerly called Chalybes) with the Tibarenians, Macrones, and Mosynœcians, but describes them as inhabiting the rugged mountain country above Pharnacia (Cerasus) (xii. 3, § 18). Xenophon in his description of the retreat of the Ten Thousand along the shores of the Euxine, places the Chalybes between the Mosynœcians and Tibarenians, and says they were a small tribe subject to the Mosynœcians, and subsisting principally by working in iron. (*Anab.* v. 5, § 1.) Hamilton (*Researches in Asia Minor*, &c., vol. i. p. 275) found a people whom he describes as working iron, which was found in abundance near the surface of the soil, without the labour of mining, and of excellent quality, in the neighbourhood of the modern Unieh, between the mouth of the Thermodon and the Jasonian Promontory: and these he very reasonably regards as representing the ancient Chalybes. This position would agree with that assigned to them by Apollonius, rather than with that of Xenophon and Strabo. But Xenophon could hardly have been in error in placing them east of the Tibarenians, whose position is clearly fixed by that of the Greek settlement of Cotyora, which was in their territory (*Anab.* v. 5, § 3) and which was certainly either at or near the modern town of

Ordu. It was 180 stadia east of the Jasonian Promontory (Arrian, *Periplus*, § 23). The probable explanation of the discrepancy appears to be that the Chalybes were originally a more considerable people, occupying the south coast of the Euxine to a greater extent, who had been broken up and driven out of part of their abodes by the irruption and invasion of other tribes, while detached portions of them retained their ancient name and habits, and continued to work at their manufacture of iron in the manner that they do to this day.

Apollonius gives a striking description of their labours, and the appearance of their country, which must have been a poetical exaggeration as applied to the Chalybes, but would be no untrue picture of the "Black Country" of Staffordshire in our own days:

> *νυκτί τ' ἐπιπλομένῃ Χαλύβων παρὰ γαῖαν ἵκοντο.*
> *τοῖσι μὲν οὔτε βοῶν ἄροτος μέλει, οὔτέ τις ἄλλη*
> *φυταλιὴ καρποῖο μελίφρονος· οὐ δὲ μὲν οἵγε*
> *πολίμνας ἐρσήεντι νομῷ ἔνι ποιμαίνουσιν.*
> *ἀλλὰ σιδηρόφορον στυφελὴν χθόνα γατομέοντες*
> *ἄνον ἀμείβονται βιοτήσιον· οὐδὲ ποτέ σφιν*
> *ἠὼς ἀντέλλει καμάτων ἄτερ, ἀλλὰ κελαινῇ*
> *λιγνύϊ καὶ καπνῷ κάματον βαρὺν ὀτλεύουσιν.*
>
> *Argonaut.* ii. vv. 1001–1008.

CHAPTER XXIII.

STRABO TO PLINY.

SECTION 1.—*Strabo to Pliny.*

§ 1. THE period of about half a century which intervened between the death of Strabo and the publication of the encyclopædic work of the great Roman naturalist, Pliny, was not in general marked by any great advance in geographical knowledge. With one important exception, to which we shall presently return, the limits of that knowledge remained much the same, or were extended only in a vague and uncertain manner. The greater part of the known world, as we have seen, was already comprised within the Roman Empire, while to the east the Parthian monarchy opposed a barrier to its advance which was never permanently transgressed, and the barbarian nations on the north were generally in a state of hostility with Rome, which precluded to a great degree all exploration in that direction.

In two quarters only were the limits of the Roman Empire extended during the interval from the death of Augustus to that of Vespasian. These were Britain and Mauretania. The former, as we have seen, had been unmolested by the Roman arms from the time of the dictator Cæsar. Augustus and his successor Tiberius had been content to leave the islanders in the possession of their liberty, receiving honorary embassies from time to time from the petty princes of the tribes nearest the coast, and apparently encouraging and promoting commercial relations between their Gaulish subjects and their opposite neighbours. These relations had certainly attained to a very considerable extent, and Londinium (London) had already

risen to be an important emporium of trade, and the seat of a considerable population.[1] The coins of Cunobeline, a king of the Trinobantes, who was a contemporary of Augustus, bear also a striking testimony to the statements of Roman writers concerning the resources and opulence of the island in his time.[2] Gold and silver were reported to exist in considerable quantities, and British pearls enjoyed a reputation, which was found to be beyond their merits when they came to be better known, as they could never rival those of the East in lustre or perfection.[3]

§ 2. The quarrels of the petty British princes among themselves soon led to their invoking the interposition of Rome; and an abortive attempt on the part of Caligula, amounting in fact to a mere display, became the prelude to a serious invasion in the reign of Claudius. In A.D. 43 Aulus Plautius landed in the island with an army of four legions. It is a curious proof of the kind of mysterious greatness that seems to have still attached to the idea of Britain,—notwithstanding the commercial intercourse of which we have just spoken, as well as the expedition of Cæsar, a century before,—that we are told the legionaries at first refused to embark on an enterprise which was to lead them beyond the limits of the known world.[4] But the first campaigns presented little difficulty,

[1] "Londinium, cognomento quidem coloniæ non insigne, sed copia negotiatorum et commeatuum maxime celebre." Tacit. *Annal.* xiv. 33. Tacitus indeed is speaking of a period after the beginning of the Roman occupation, but so considerable a trade could hardly have arisen within a few years.

[2] They are found in great numbers, both in gold and silver (see Evans's *Coins of the Ancient Britons*, 8vo. Lond. 1864). The abundance of them seems to testify to the accuracy of the statement of ancient writers that both metals were found in Britain, in such quantities as to be a temptation to its conquest. "Fert Britannia aurum et argentum et alia metalla, pretium victoriæ." Tacit. *Agric.* c. 12. See also Strabo, iv. 5, § 2, who distinctly notices both gold and silver as articles of *export* from Britain.

[3] See Note A, p. 369.

[4] Dion Cass. lx. 19. *ὡς γὰρ ἔξω τῆς οἰκουμένης στρατευσόμενοι ἠγανάκτουν.* The same idea is found in the rhetorical declamation of Josephus (writing in the reign of Vespasian) where he makes king Herod Agrippa II. describe the Romans as not content with the limits of the known world, and seeking *another world beyond the Ocean*, by carrying their arms among the unknown Britons. *ἀλλ' ὑπὲρ ὠκεανὸν ἑτέραν ἐζήτησαν οἰκουμένην, καὶ μεχρὶ τῶν ἀνιστορήτων πρότερον Βρεττανῶν διήνεγκαν τὰ ὅπλα.* (Joseph. *B. Jud.* ii. 16, § 42.)

and Plautius was able to prepare the way for the emperor himself, who soon after followed to earn an easy, if not a bloodless, victory. He crossed the Thames, defeated the Trinobantes, and took Camulodunum, where Cunobeline had established his capital.[5]

Claudius himself soon quitted the island,[6] but he left his generals to continue its conquest, and it appears that they quickly reduced all the southern tribes to subjection, or at least to submission. But the extent to which the Roman arms were actually carried at this period we have no means of determining. Vespasian, who was afterwards emperor, served as a legate in these campaigns, and we are told that he subdued two of the most powerful nations (their names are not given) and reduced the Isle of Wight (Vectis), a conquest which probably attracted attention from its being a separate island.[7] The supposition that he advanced as far as Exeter is a mere conjecture:[8] but there seems no doubt that the Roman authority was gradually established as far as the Severn (Sabrina): and when in A.D. 47 the new governor Ostorius Scapula succeeded to Plautius in the command, he appears to have found himself already master of the central as well as southern portions of the island. This may be clearly inferred from the fact that we find him engaged in hostilities, first, against the Iceni, who occupied Suffolk and Norfolk, next, against the

[5] Dion Cass. lx. 19–21.

[6] The statement of Suetonius (*Claud.* 17), that he spent only a few days in the island ("sine ullo prælio aut sanguine intra paucissimos dies parte insulæ in deditionem recepta") is probably an exaggeration; but the whole time of his absence from Rome did not exceed six months.

[7] "Duas validissimas gentes, superque viginti oppida, et insulam Vectem, Britanniæ proximam, in ditionem redegit" (Suet. *Vespas.* 4).

The two nations not being named have left free scope to the conjectures of antiquarians. It has been supposed by many writers that the tribes in question were the Belgæ and Dumnonii. That the former, who inhabited Hampshire, should have been subdued by Vespasian before he attacked the Isle of Wight may be considered certain. But it is unlikely that he should have advanced so far to the west, as to reduce the Dumnonii, who held Devonshire and Cornwall, without any more distinct notice being found of so important a conquest.

[8] This is admitted by Mr. Merivale, who acknowledges that there is no authority on the subject (*Hist. of the Romans*, vol. vi. p. 28). See Note B, p. 369.

Cangi, not far from the Irish Sea,[9] lastly, against the Silures, who inhabited South Wales and the countries bordering on the Severn. The Ordovices in North Wales were soon involved in this last war—rendered famous by the exploits and captivity of Caractacus (A.D. 51): while the Brigantes, north of the Mersey, one of the most powerful nations of Britain, as they held almost the whole of Lancashire and Yorkshire, entered into friendly relations with the Roman governor. The foundation of a Roman colony at Camulodunum (Colchester) was, in pursuance of the ordinary policy in such cases, the first step to the permanent establishment of the authority of Rome, and the southern portion of the island was reduced to the form of a province, and brought under the usual conditions of provincial administration.[1]

§ 3. This state of things continued under the reign of Nero until the year A.D. 61, when Suetonius Paulinus, solely with a view to obtain credit for military successes, attacked and reduced the Island of Mona (Anglesey), which had up to this period continued to be the chief seat of the Druids and their religion.[2] This exploit was followed by a sudden outbreak of the Iceni under their queen Bonduca or Boudicea, who took and plundered the newly founded colony of Camulodunum, as well as the two flourishing towns of Verulamium (St. Alban's) and Londinium;[3] but they were reduced to submission by a

[9] The site of the Cangi is wholly uncertain. The only clue to their position is derived from this passage (Tacit. *Annal.* xii. 32), from which we learn that the Roman general had advanced through their country till he found himself *near* the sea-coast, which faced Ireland (jam ventum haud procul mari quod Hiberniam insulam aspectat). The supposition that they were situated in Caernarvonshire, because Ptolemy has a promontory named Ganganum in that part of the island, appears to me wholly untenable. Mr. Beale Poste places them "westward of the Coritani," which is plausible enough, but rests on no authority.

[1] "Redactaque paulatim in formam provinciæ proxima pars Britanniæ" (Tacit. *Agric.* c. 14). This he describes as taking place within the time that Aulus Plautius and Ostorius Scapula were governors. What were the limits of the province as thus first constituted, we are not told, nor is it of much importance. It almost certainly did not extend beyond the Severn to the west, or the Mersey and Humber to the north.

[2] Tacit. *Annal.* xiv. 29, 30; *Agric.* 14.

[3] Tacitus asserts that not less than 70,000 "citizens and allies" were massacred in these three towns (*Annal.* xiv. 33), and Dion Cassius raises the number to 80,000 (lxii. 1). This is evidently an exaggeration, but still it may be taken as a proof that they

single defeat and henceforward subsided without further resistance into the condition of provincial subjects of Rome.[4] We hear of no further hostilities in Britain till the reign of Vespasian, under whom Petilius Cerialis turned his arms against the Brigantes, and appears to have effectually broken the strength of that powerful nation.[5] His successor Julius Frontinus (A.D. 75) imitated his example by attacking and subduing the Silures, who, notwithstanding their defeat under Caractacus, had evidently still retained their independence in their rugged and mountainous country.[6] Agricola, who was appointed to the government of Britain in A.D. 78, opened his career by a similar campaign against the Ordovices, the inhabitants of North Wales, and carried the Roman arms for the second time across the Menai Strait into the island of Mona.[7]

At this time therefore it may fairly be said that the whole country to the south of the Tyne was either actually reduced under the dominion, or at least acknowledged the authority, of Rome. Their arms had not yet penetrated into the northern part of the island, and the name of the Caledonians had as yet scarcely reached their ears.[8] But in some way or other they had certainly obtained authentic information concerning the Orcades (Orkneys) as a numerous group of islands at the northern extremity of Britain. The statement of late writers (Eutropius and Orosius) that they were *conquered* by Claudius, is certainly erroneous; but on the

really contained a considerable population. The statement of Dion (*l. c.*) of the large sum of money that the philosopher Seneca had put out to interest *among the Britons*, is also an evidence of the extensive commercial relations that had been already established in the province.

[4] "Unius prælii fortuna veteri patientiæ restituit." (Tacit. *Agric.* c. 16.) For the particulars of the revolt, see Tacitus (*Annal.* xiv. 31–39) and Dion Cassius (lxii. 1–12).

[5] Tacit. *Agric.* 17.

[6] Ibid.

[7] Ibid. 18.

[8] No mention is found of the Caledonians in Pomponius Mela, nor does even Pliny notice the name as that of a nation; but speaks vaguely of "the Caledonian forest" as the farthest limit of the Roman conquests, which it had taken them thirty years to reach, "triginta prope jam annis notitiam ejus (Britanniæ) Romanis armis non ultra vicinitatem silvæ Caledoniæ propagantibus" (*Hist. Nat.* iv. 16, § 102).

other hand the assertion of Tacitus that they were first *discovered*, as well as subdued, by Agricola, is clearly disproved by the fact that they are distinctly mentioned both by Mela and by Pliny.[9]

§ 4. On the side of Germany little, if any, advance was made in the period of which we are now treating. The resolution adopted by Tiberius, to recognize the Rhine as the established limit of the Roman Empire in this direction, was practically followed by his successors. We hear of no more expeditions to the banks of the Weser and the Elbe;[1] and when on one occasion Corbulo, the ablest general of his day, was about to advance into the land of the Chauci, to punish them for their incursions on the Roman allies, he was at once recalled by a peremptory mandate from Claudius.[2] He attempted to make up for this disappointment by constructing a navigable canal from the Meuse to the Rhine, to obviate the necessity of transporting troops by sea in moving from one river to the other.

Meanwhile numerous changes were taking place in the interior of Germany itself, which we are very imperfectly able to follow. Continual wars had arisen among the different tribes, leading in some cases to the destruction or humiliation of nations that had once been among the most powerful of the native races of Germany; in others to their migration and change of abode. Thus we find the power of the Cherusci, who had played so prominent a part in the earlier wars with the Romans, in great measure broken by internal dissensions; the Chatti sustained a severe defeat from the Hermunduri;

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[9] Eutropius (vii. 13) says of Claudius, "Quasdam insulas etiam ultra Britanniam in Oceano positas, Romano imperio addidit, quæ appellantur Orcades." The same statement is made by Orosius (vii. 6). Tacitus boasts that Agricola "simul *incognitas* ad id tempus insulas, quas Oreadas vocant, invenit domuitque" (*Agric.* c. 10). It is very probable that they were not visited by a Roman fleet till the time of Agricola; but they were certainly known by name, and hearsay report, long before. Probably this first knowledge of them, though not their conquest, really dated from the time of Claudius.

[1] Hence Tacitus, writing after A.D. 100, says with some bitterness of the Elbe: "Albis, flumen inclitum et notum olim, nunc tantum auditur" (*Germ.* c. 41).

[2] Tacit. *Annal.* xi. 20; Dion Cass. lx. 30.

and the latter people joined with the Lygii and other less known tribes to expel Vannius, a king of the Suevi, or rather of the tribe called Quadi, who had been recently settled in the country now called Moravia.[3] Vannius was driven across the Danube and took refuge in the Roman territories, where the emperor, though he had refused to interpose in the war, afforded him a secure asylum. In another instance Claudius consented to nominate a king for the Cherusci, at their own request, a step which had however only the effect of increasing their domestic dissensions. But the relations thus subsisting between the Romans and their German neighbours could not but lead to increased intercourse between them, and to the gradual diffusion of that enlarged knowledge of the country and its inhabitants, which we subsequently find in existence, without knowing from what source it was acquired.

§ 5. In one instance only do we find anything like systematic inquiry, and unfortunately in this case also with very little definite result. We are told by Pliny that in the reign of Nero a Roman knight was sent by one Julianus, who had the charge of a gladiatorial show given by the emperor, in quest of amber, and that in pursuit of this object he penetrated across the continent of Germany to the shores of the Northern Sea. This he reported to be distant 600 Roman miles from Carnuntum in Pannonia, from whence he set out, and he is said to have explored the shores of the Ocean thus discovered for some distance.[4] He brought back enormous quantities of amber, so that the very nets which protected the spectators from the wild beasts in the arena were studded with it;[5] but unfortunately we have no geographical details, and are left wholly in the dark as to any geographical results he may have

[3] Tacit. *Annal.* xii. 27–30.

[4] Plin. *H. N.* xxxvii. 3, § 45. "Sexcentis fere M. pass. a Carnunto Pannoniæ abest littus id Germaniæ, ex quo invehitur, percognitum nuper. Vidit enim eques Romanus, missus ad id comparandum a Juliano curante gladiatorium munus Neronis principis, qui hæc commercia et littora peragravit." The last words would have led us to hope for geographical information which we do not find.

[5] The largest single mass weighed not less than 13 pounds. Plin. *l. c.*

brought home. It may however be considered certain that he reached the shores of the Baltic, which have been in all ages the great repository of this valuable product; a journey which would in fact present no great difficulties, if he was able to secure a friendly reception from the different tribes that he encountered on his route. Indeed the choice of Carnuntum, a place so far to the eastward, as his starting-point, can only be explained on the supposition that there was already a trade established between Pannonia and the amber-lands, and that he could thus obtain information from the native traders of the situation of those lands, and the general course to be pursued. Pliny indeed intimates distinctly that it was through Pannonia that amber had first come to be generally known, and it was from thence it was carried to the head of the Adriatic, where it was so long supposed to be produced.[6]

But whatever additional information this solitary explorer may have brought back concerning the amber trade, it seems certain either that he had really acquired no geographical information of any value, or at least that Pliny had no access to it; for the utterly vague and indefinite ideas, which that writer possessed concerning the shores of the Northern Ocean, exclude the supposition that he had consulted the authentic statements of any person who had himself visited those shores.[7] The circumstance that neither he, nor any other Roman writer before the time of Ptolemy, notices so important a river as the Oder, is sufficient proof how little acquaintance they really possessed with these countries. It appears at first singular that while they had apparently never heard of the Oder,

[6] "Famam rei fecere proximæ Pannoniæ, id accipientes circa mare Adriaticum." Plin. *H. N.* xxxvii. 3, § 44. He adds, plausibly enough, that the fables which connected it with the Padus, arose from the habit of the women of those countries wearing necklaces of amber, as they still did in his day.

[7] It is suggested by Ukert (*Germanien*, p. 181) that the very precise and definite information given by Tacitus (*Germania*, c. 45) concerning the locality and mode of collection of amber, which he distinctly confines to the Æstii, a tribe not mentioned by Pliny, may be derived from the accounts brought home by this Roman knight. But this would render it all the more difficult to account for the silence of Pliny as to that people.

they were familiar with the name of the Vistula, but their knowledge of this latter river was probably obtained, not through Germany, but through Pannonia and Sarmatia; and it is not unlikely that its valley was the channel by which the amber trade with Pannonia had so long been carried on.[8]

§ 6. On their eastern frontier the Romans were engaged in repeated hostilities with the Parthians, of which the possession or rather dominion of Armenia was generally the occasion, or the prize. That country was still governed by its native princes, and retained nominally an independent position, but the Romans and Parthians, by supporting the claims of rival pretenders to the throne, sought in fact to establish their own supremacy, while the unhappy Armenians were the victims in turn of both contending powers. Corbulo, whose successes in the East were regarded as rivalling those of Pompey, took and destroyed Artaxata, the capital of Armenia, and made himself master of Tigranocerta, which was still a populous city, and a strong fortress.[9] But though these successive campaigns must have increased the knowledge possessed by the Romans of this rugged and mountainous country, and refreshed the memory of that previously acquired by Lucullus, they did not extend their acquaintance with the neighbouring regions or contribute in any considerable degree to enlarge the sphere of their geographical knowledge. South of the mountains of Armenia the Euphrates formed the boundary of the Roman Empire, which was not crossed by a Roman army, from the time of Augustus to that of Trajan.

§ 7. It is very rarely that we find in ancient times the boundaries of geographical knowledge enlarged by an expedition intentionally undertaken for the purpose of discovery, but

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[8] From Carnuntum it would be easy to ascend the valley of the March, and thence cross the mountains to the sources either of the Oder or the Vistula.

[9] Tacit. *Annal.* xv. 4. "Occupaverat Tigranocertam, urbem copia defensorum et magnitudine mœnium validam." It is mentioned also by Pliny (*H. N.* vi. 9, § 26), as one of the chief cities of Armenia, and its name is still found in Ptolemy (v. 13, § 22), but from this time it disappears. Concerning its site see Note D, Chapter XVIII.

we meet with one case in the reign of Nero; by whom two centurions were dispatched with orders to ascend the Nile from Syene, and solve, if possible, the long disputed question of its origin. It is needless to say that they did not really accomplish this object, but they brought back information of much interest and value, and undoubtedly ascended the river to a higher point than had previously been known to either Greek or Roman geographers.

Pliny unfortunately contents himself with giving the distances and some few details, as high up as Meroë, a point that was already well known; so that thus far the explorers did no more than add to the accuracy of topographical details.[1] They reckoned the whole distance from Syene to Meroë (following the course of the Nile) at 873 Roman miles; of which Napata, the only place worthy to be called a town, and which was already well known by the expedition of Petronius,[2] was distant 360 miles from the capital. The latter was situated 70 miles above the junction of the Astaboras with the true Nile, a distance which is found by modern observations to be just about correct. About Meroë itself they found a comparatively fertile country, with verdure and a certain extent of wood; traces of elephants and rhinoceroses were also seen. But above this the country was desert, or at least uninhabited, and no towns were to be found on either bank.[3]

This is all that we learn from Pliny, who gives us no means of judging how much farther they actually penetrated. But a valuable supplement to his account is furnished by Seneca, who was immediately contemporary with the expedition in question, and states that he had his information from two centurions who had formed part of it.[4] After a long journey

[1] Plin. *H. N.* vi. 29, §§ 184–186.

[2] See Chapter XX. p. 182.

[3] Plin. vi. 29, § 181. "Hæc (oppida) sunt prodita usque Meroen, ex quibus hoc tempore nullum prope utroque latere exstat. Certe solitudines nuper renuntiavere principi Neroni missi ab eo milites prætoriani cum tribuno ad explorandum, inter reliqua bella et Æthiopicum cogitanti."

[4] Seneca, *Natural. Quæst.* vi. 8. The philosopher ascribes the expedition to a pure love of inquiry on the part of the young prince ("quos Nero Cæsar, ut aliarum virtutum (!), ita veritatis in primis amantissimus, ad investigandum caput Nili miserat"). Whether this be true, or, as Pliny suggests, it was under-

(he tells us) "which they had accomplished by the assistance of the king of Ethiopia, and the recommendations with which he had furnished them to the neighbouring kings, they arrived at length at immense marshes, the exit from which was unknown to the inhabitants, nor could any one hope to discover it. So entangled were the waters and the herbage, and the waters themselves so full of mud, and beset with plants, that it was not possible to struggle through them, either on foot, or in a boat, unless it were a very small one containing only one person. There they added, we saw two rocks, from which there fell a river with a great mass of water." The last statement is unintelligible, and must in all probability have really referred to some other locality; but it is impossible not to recognize in the rest of the description a correct picture of the great marshes on the course of the White Nile, above its junction with the Sobat, which were first rediscovered in modern times by the Egyptian exploring expeditions in 1839 and 1840, and have recently been rendered familiar to all by the graphic accounts of Sir S. Baker. No such marshes are found lower down the course of the Nile, and hence we may assume with confidence that the explorers of Nero had actually penetrated as far as the 9th parallel of north latitude, where the great marshes referred to commence. The friendly reception accorded them by the king of Ethiopia, and the facilities furnished by him towards their farther progress, will explain their having advanced so far, and reached a point which was not again visited by any European for nearly eighteen centuries.

§ 8. At the other extremity of Africa the Roman arms had meanwhile been the means of advancing geographical knowledge. Mauretania which, as we have seen, had continued during the reigns of Augustus and Tiberius to be governed by its own kings, had subsequently been incorporated with the

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taken with an ultimate view to conquest, it is clear that the expedition itself was wholly of a pacific character.

Roman Empire (A.D. 42), and constituted as a province, being however divided into two, which were distinguished as Mauretania Tingitana and Mauretania Cæsariensis, each retaining its separate administration. The former comprised the whole north-western angle of Africa, adjoining the Straits, and extending eastward as far as the river Mulucha, which had formerly constituted the limit between Mauretania and Numidia.[5] Its extent along the Atlantic coast was probably ill-defined, but its real boundary in this direction was the limit of the towns and settlements, the last of which was Sala, still called Sallee, and situated about 110 G. miles south of Cape Spartel.

It was not long after the Roman dominion was thus established in Mauretania, that Suetonius Paulinus (the same who afterwards distinguished himself in Britain), being appointed governor, took occasion to penetrate into the interior, with a view of subduing the native tribes, and was the first to carry the Roman arms across Mount Atlas. He reported the whole of the lower part of the mountain to be covered with dense forests of trees of an unknown species: but its summit was deeply covered with snow even in summer.[6] He attained the highest point in ten days' march, and beyond that proceeded as far as a river which was called Ger, through deserts of black sand, out of which there rose from place to place rocks

[5] In the time of Jugurtha, as Sallust points out, the Mulucha formed the boundary between the kingdom of Bocchus and that of the great tribe of the Massæsylians, who were at that time considered as belonging to Numidia. Under the Empire, on the contrary, the whole territory of the Massæsyli was included in the province of Mauretania Cæsariensis, which extended from the river Mulucha (still called the Wady Muluyah) to the mouth of the Ampsaga (Wady el Kebir). The *provincial* appellation of Numidia was thus limited to the narrow space between the Ampsaga and the Tusca. (See Chapter XX. p. 169.)

[6] This is probably a mistake; no part of the range of the Atlas yet examined being permanently covered with snow, though the highest summits attain an elevation of 12–13,000 feet, and this in a different part of the range; but the great heat and dryness of the climate combine to prevent the accumulation of any great quantity of snow. But Suetonius, as Pliny tells us directly after, made his expedition *in the winter*, and could therefore report only from hearsay that the snow remained through the summer. It is indeed at the present day generally believed and reported by the natives that a part of the range is always covered with snow.

that had the aspect of being burnt. He found the heat of these regions such as to render them uninhabitable, although it was the winter season. The forests adjoining them, which swarmed with elephants and other wild beasts and serpents of all kinds, were inhabited by a people called Canarians.[7]

Interesting as is this narrative, for which we are indebted to Pliny, who doubtless derived it from the commentaries of Suetonius himself,[8] it is obvious that it is very imperfect, and leaves the most important geographical questions unanswered. We do not learn by what pass he traversed the chain, or from what point the ten days' march was computed. The most interesting geographical fact that we learn from it, is the existence immediately south of the Atlas of a river which bore the name of Ger, an appellation that has given rise to much controversy, from its being confused, or supposed to be connected, with the far more celebrated Niger, the object down to our own time of so much discussion and so many exploring expeditions. Taking the statement of Pliny as it stands, there seems no doubt that the Ger discovered by Paulinus, was one of the rivers that take their rise on the southern slope of the Atlas, and are lost after a course of no great length in the sands of the Sahara. The most considerable of these is described both by Leo Africanus and other Arabic historians under the name of Ghir, an appellation by which it is known to this day. This stream has its source in the Atlas, nearly opposite to that of the Mulucha, and hence it would appear probable that Suetonius had ascended the valley of the latter river, one of the most considerable in Mauretania, and crossed the range near its head-waters. It was by this pass that the enterprising traveller M. Gerard Rohlfs, to whom we are indebted for the latest information concerning this region south

[7] Plin. v. 1, §§ 14, 15. This mention of a people called Canarians on the mainland is curious. It was doubtless connected with the name of Canaria given to one of the Fortunate Islands.

[8] Pliny himself cites Suetonius Paulinus among his authorities for his fifth book, in which the above narrative is contained. It is probable therefore that he had left a written account of his campaign; the loss of which is much to be regretted.

of the Atlas, crossed the mountain range in 1864, and descended into the valley of the Ghir.

§ 9. It is in all probability also to the period that we are now considering that must be assigned a voyage, of the date and circumstances of which we have no information, but which in its consequences became undoubtedly one of the most important that was made in ancient times. This was the voyage of Hippalus, a Greek mariner, as we may infer from his name, who being engaged in the trade with India, and having observed the regularity of the monsoons, was the first to take advantage of them, and venture to steer a direct course from the promontory of Syagrus (Cape Fartak) in Arabia to the coast of India, thus avoiding the whole of the great circuit by the entrance of the Persian Gulf, and the coast of Gedrosia and the mouths of the Indus. His example was generally followed, and the practice had become completely established in the time of Pliny and the author of the Periplus of the Erythræan Sea.[9] Neither of these writers furnish us with any date, but they both allude to the discovery as a recent one, and as no mention is found in Strabo of so important an innovation—a case entirely exceptional in ancient navigation—it seems reasonable to conclude that it took place after the time of that author; at all events after the time that he was in Egypt and collected the notices with which he has furnished us concerning the trade with India, and the great development that it had assumed during the reign of Augustus.[1] But as we have no details concerning the voyage in question, nor any means of judging how far it directly contributed to the geographical knowledge of India,—though it is certain that it led to a great

[9] Plin. *H. N.* vi. 23, §§ 100, 101; *Peripl. Maris Erythræi*, § 57, ed. Müller.

[1] M. Vivien de St. Martin (*Le Nord de l'Afrique dans l'Antiquité*, p. 268) regards this rapid increase of the Indian trade as arising from the discovery of Hippalus, which he consequently places before the Christian era; but that discovery itself clearly implies the previous existence of a considerable trade in that direction, which made it an object of importance to shorten the voyage. Nor could any navigator have seen the expediency of trusting himself to the monsoon to cross the Indian Ocean, without having already acquired a pretty clear idea of the situation of the countries that he was seeking.

extension of the commercial relations with that country, and therefore indirectly to that vastly increased knowledge of its geography that we find in Pliny and succeeding writers—it will be as well to postpone its further consideration till we come to examine the geographical results that we find embodied in Pliny and the Periplus.

SECTION 2.—*Pomponius Mela.*

§ 1. The only geographical writer of any importance, who belongs to the period we are now considering, is POMPONIUS MELA, the author of a compendious treatise on geography, which has derived the more value in our eyes from the circumstance of its being the only regular treatise on the subject in the Latin language that has been preserved to us, with the exception of that which forms a part of the much more comprehensive work of the elder Pliny. It is indeed such a mere abridgement, and has so little pretension to anything like a scientific character, that we should have supposed it to have derived its value almost exclusively from its accidental preservation, did we not find it repeatedly cited by Pliny, in the imposing array of his authorities, in a manner that seems to imply that it enjoyed some reputation, even in his day.[2]

Of the author himself we know nothing beyond his name, and the fact, which he tells us himself, that he was born at a place in Spain called Tingentera, the name of which is not otherwise known, but which appears to have been situated close to the Strait of the Columns.[3] The date of his work may

[2] It is cited among his authorities for all the four *geographical* books (from the 3rd to the 6th), and again for the 8th, 12th, 13th, 21st, and 22nd, for individual notices, concerning animals, trees, &c. But as he never quotes him for any special statements, we are unable to determine the full extent to which he made use of his work.

[3] ii. 6, § 96. It seems highly probable that Tingentera was in reality the native name of the town called by Strabo Julia Joza, and by later writers, and on coins Julia Traducta; which had been peopled, as Strabo tells us, by inhabitants transported thither from Tingis in Mauretania. This would be easily reconciled with the statement of Mela (*l c.*), that Tingentera was in-

be gathered with certainty from a passage concerning Britain, in which he speaks of that island as having hitherto been very imperfectly known, but about to be much better and more certainly known from the expedition of the emperor, who was speedily going to return to Rome, and to celebrate the triumph which he had earned by his own personal exertions.[4] This can hardly be referred to any other emperor than Claudius, and his expedition to Britain in A.D. 43, an account of which has been already given.[5] As Mela speaks of him as not having yet returned to Rome, we may place the composition of his little work in that very year.

§ 2. The arrangement of his materials is peculiar, and is evidently derived rather from writers who, like Scylax and the author of the treatise ascribed to Scymnus Chius, had composed a *periplus* of the countries bordering on the Mediterranean than from general or systematic treatises on geography. He begins indeed with a brief description of the earth, its division into hemispheres (a northern and a southern one), and into five zones, of which two only were inhabitable, and it is remarkable that he speaks, as of an undoubted fact, of the existence of *antichthones*, inhabiting the southern temperate zone, though they were unknown and inaccessible on account of the heat of the intervening tract or torrid zone.[6] He next gives a brief outline of the three continents, Europe, Asia and Africa, their relative position and their boundaries, in regard to which he follows Eratosthenes, or rather perhaps the views that had been generally adopted from the time of Eratosthenes to his own. Thus he makes the Tanaïs the

habited by Phœnicians brought over from Africa (quam transvecti ex Africa Phœnices habitant). It probably occupied the site of the modern Tarifa.

[4] iii. 6, § 49.

[5] See Note C, p. 370.

[6] i. 1, § 4. "Reliquæ (zonæ) habitabiles paria agunt anni tempora, verum non pariter. Antichthones alteram, nos alteram incolimus. Illius situs ob ardorem intercedentis plagæ incognitus, hujus dicendus est."

This idea of the Antichthones appears to have been connected with the vague suggestion of Hipparchus, that it was uncertain whether Taprobane was an island, or the commencement of another world (see Pliny, *H. N.* vi. 22, § 81). But Mela does not intimate any such connection. With him the continent of the Antichthones seems to have been a purely theoretical assumption.

boundary between Europe and Asia, and the Nile that between Asia and Africa; he accepts as an undoubted fact the doctrine that the inhabited world was surrounded by the Ocean, from which it received four seas, as inlets or gulfs; one from the north, or from the Scythian Ocean (the Caspian); two from the Indian Ocean on the south,—the Persian and Arabian Gulfs; and one from the west, by far the most important of all, but for which, as we have seen, neither Romans nor Greeks had any distinctive name, and Mela, writing as a geographer, is constrained to use the vernacular phrase of "Our Sea."[7]

But after this general outline, instead of following the same arrangement for his more detailed description, and treating of the several countries as subdivisions of the three continents in succession—as is done by Strabo and by all modern geographers—he begins at the Strait of the Columns (the Straits of Gibraltar) and describes in order the countries lying along the south shore of the Mediterranean—Mauretania, Numidia, Africa proper, and the Cyrenaïca, to Egypt; then in like manner the portions of Asia adjoining the Mediterranean, the Ægean and the Euxine, from the confines of Arabia to the Tanaïs; and thence returns along the north shores of the Euxine and the Mediterranean, describing European Scythia, Thrace, Macedonia, Greece, Italy, and the southern portions of Gaul and Spain; thus returning to the point from whence he set out. He next gives an account of all the islands within this inner sea, including not only the great and important ones, such as Sicily, Sardinia, Crete, &c.—but mere rocks adjacent to headlands, like the Symplegades or Chelidoniæ. Lastly he proceeds to make the circuit of the continents following the shores, or supposed shores, of the external ocean, but this time in an inverse order to the preceding, beginning

[7] "Id omne, qua venit, quaque dispergitur uno vocabulo Nostrum mare dicitur." (i. § 6.) He does not even employ in any case the expression of "Internum Mare," which is occasionally found in Pliny, though hardly used as a proper name. The now familiar appellation of Mediterranean is in like manner first used by Solinus, only as a convenient designation, not as a strictly geographical name (Solin. c. 23, § 14).

with the Atlantic coasts of Spain, then those of Gaul, Germany and Sarmatia, and so round the northern parts of Asiatic Scythia to the eastern extremity of Asia, and the confines of India. Here he again pauses to describe the islands found in this external ocean, beginning with Gades, and including Britain and Ireland (which he calls Juverna) and Thule; then he returns to the extreme east, and describes India and Arabia, the Persian and Arabian Gulfs, the Ethiopians, and the western coast of Africa, which he regarded, as all his predecessors had done, as extending direct from the land of the Ethiopians to the north-western angle of the continent adjoining the Strait of the Columns.

The defects of such a system are obvious. Spain and Gaul are each divided into two separate portions, described in different parts of the work; while the interior of Germany, and the Alpine and Danubian provinces—Rhætia, Vindelicia, Noricum, and Pannonia, find no place at all; Dacia is equally unnoticed, the very name of the Dacians, so familiar to the Romans in the first century, as well as in later times, being actually not mentioned by Mela! The same thing is the case with the interior of Asia, where the Medians, Bactrians and Arians are merely mentioned by name in the preliminary enumeration of the nations of Asia, and find no place in the subsequent description; while no notice whatever is taken of countries like Drangiana, Margiana and Sogdiana, the names of which had been so long well known to the Greek geographers.

§ 3. It is evident that Mela intended his work as a popular compendium of geography, rather than an introduction for the use of the student; hence he not only dismisses the whole subject of mathematical geography with the very few words to which we have already adverted, but he nowhere enters into questions of measurements and distances, contenting himself with describing as well as he can the general form and position of countries, their boundaries and leading natural features, as well as their physical character and climate; adding moreover, in regard to all those nations that were likely to be little

known to his readers, a brief account of their manners and customs and other national peculiarities. It is these notices, concise and summary as they necessarily are, that constitute the chief interest of his little work. They must not however be received as representing in all cases the condition of the different nations described, as they existed in the days of Mela. There can be no doubt on the contrary that they are taken, in most, if not in all, instances from earlier writers, and though he gives us no hint of his authorities, we cannot fail to recognize that many of them are derived directly from Herodotus, and therefore represent in reality the state of things that existed nearly five centuries before the time at which our author wrote. This is especially the case with the long description of the manners of the Scythian tribes inhabiting the regions north of the Euxine; almost the whole of which is taken without alteration from the ancient historian.[8] In some respects indeed Mela is actually in arrear of Herodotus; as he not only relates without question the fables of the Arimaspians and the griffins, the Indian ants, and the winged serpents on the borders of Arabia and Egypt, but accepts as an undoubted fact the existence of the Rhipæan mountains, and the Hyperboreans beyond them, on the shores of the Northern Ocean.[9] He tells us also that the Tanaïs, which was described by Herodotus as rising in a lake, had its sources in the Rhipæan mountains, and flowed down from them with so rapid a stream that it was never frozen even in the hardest winter, when the Mæotis and Bosphorus were a mass of ice;[1] a strange fiction, which is not found in any other geographical writer.

§ 4. Mela indeed cannot claim the merit of having exercised much critical judgement. He has repeated without scruple all the usual fables concerning the Amazons, the Hyperboreans, the Blemmyes in Africa without heads, and the goatfooted Ægipanes; while with regard to the Nile, after stating the

[8] ii. 1, §§ 1–7, 8–15. [9] ii. 1; iii. 5, §§ 36, 37. [1] i. 19, § 115.

various theories that had been proposed to account for its periodical inundations, he seems disposed to acquiesce in the strange suggestion that it had its origin in the southern hemisphere, or land of the Antichthones, and flowed from thence in a hidden channel under the sea, till it emerged again in Ethiopia! Its being flooded in summer would thus be accounted for, as that was the winter season in the part of the world where it took its rise.[2] Yet in a later passage of his work[3] he inclines to the opinion of those who supposed the Nile to have its source near Mauretania, among the Western Ethiopians.

It is more strange that, notwithstanding the progress of the Roman arms in Germany and the neighbouring countries, his ideas concerning the Danube were almost as confused and erroneous as those of the earlier Greek geographers. While he correctly states that it had its sources in Germany, and was called Danubius in the upper part of its course, and Ister where it became known to the Greeks, he gives no particulars as to the former, nor does he name any of its great tributaries, contenting himself with saying that it flowed for an immense distance, and traversed great nations.[4] In another place he tells us distinctly that the Ister (which he takes care again to identify with the Danube) flows through Istria into the Adriatic Sea;[5] and even adds that its stream, like that of the Padus from the other side, poured itself with such impetuosity into the sea that each river retained its course unbroken, until their waters met, and were checked by their mutual action.[6]

§ 5. It is unnecessary to follow in detail the brief notices that he has given of the various countries which he describes; it will suffice to point out the few instances in which his little

[2] i. 9, § 54.
[3] iii. 9, §§ 96, 97.
[4] "Per immania magnarum gentium diu Danubius est." ii. 2, § 8.
[5] ii. 3, § 57.
[6] ii. 4, § 63. This absurd tale, strange as it may seem, appears to have been generally believed, and was related among others by Cornelius Nepos, from whom perhaps Mela derived it; though, as Pliny justly points out, he ought to have had better information, as coming from the banks of the Padus (plerique dixere falso, et Nepos etiam Padi adcola. Plin. *H. N.* iii. 18, § 127).

work may be considered as really showing any advance in geographical knowledge, or adding any facts of interest to what may be derived from earlier writers. The position of his birthplace naturally made him well acquainted with the Straits which derived their name from the Columns of Hercules, concerning which—often as they had been visited and described—there was great discrepancy among Greek writers.[7] He correctly points out that the real Columns (*i. e.* those to which the name had been originally given) were the two lofty mountains, Calpe and Abyla, the one on the European, the other on the African coast, which rise like pillars on each side of the Strait; both of them projecting considerably into the sea, but the former much the most, so as to be almost isolated.[8] The narrow sea however, or the Straits in the wider acceptation of the term, extended as far as the promontory of Juno (Cape Trafalgar) on the European side, and that of Ampelusia,—the same that was called by Strabo Cotes, the modern Cape Spartel—on the African.[9]

With the geography of Western Europe he appears to have been in general better acquainted than any of his Greek predecessors, and his notions concerning Spain and Gaul in particular show a considerable improvement in his conception of their figure and position, as compared even to those of Strabo. Thus he was well aware that the western coast of Gaul, after preserving at first a nearly straight course northwards as far as the mouth of the Garonne, afterwards began to trend to the west, and project so far in that direction as to be opposite to the northern or Cantabrian shores of Spain, leaving between them an extensive bay (the Bay of Biscay), for which he has however no name.[1] This important feature in the geography

[7] See the different statements given by Strabo, iii. 5, § 5, p. 170.

[8] In regard to Calpe (the rock of Gibraltar) he notices particularly the extensive caves by which it is almost perforated.

His statement that the Strait in its narrowest part was only 10 miles wide, is almost precisely correct; the width between Tarifa and Alcazar Point being (according to Admiral Smith) 9¼ G. miles, while between Gibraltar and Ceuta it is 12 miles (Smyth's *Mediterranean*, p. 159).

[9] ii. 6, § 96.

[1] iii. 2, § 23.

of Western Europe had been, as we have seen, entirely misconceived by the Greek geographers; Eratosthenes having given an undue extension to the Gaulish or Armorican promontory, while he almost ignored the projection of the Spanish coast to the north-west; and Strabo on the other hand was either entirely ignorant of the Armorican promontory, or altogether underrated its importance. It was natural that the Roman occupation of both provinces should have led to clearer ideas on the subject.

His description of the north-western angle of Spain (the modern Galicia) is unusually full and detailed, and shows an accurate and minute acquaintance with this remote corner of his native country which is rather surprising. It may be observed that he always terms the headland of Cape Finisterre, which was known to the Greeks as the promontory of Nerium, only the Celtic promontory, and that he distinctly designates the tribes nearest to it, the Nerii and Artabri, as well as those inhabiting the west coast, as far as the Douro, as Celtic tribes. The Astyres and Cantabri, who were undoubtedly of pure Iberian origin, he regards as distinct.[2] It is worthy of notice also that he had a clear conception of the true character of the Pyrenean chain and states that it extended at first direct from the Mediterranean across to the Ocean, and then turning inland into the interior of Spain, continued with an unbroken course till it reached the western shores of that country facing the Atlantic.[3] This view is perfectly correct, the mountains of Guipuzcoa, Biscay, Asturias and Galicia, being in reality only a prolongation of the chain of the Pyrenees, though that name is commonly applied only to the direct chain, which runs across from sea to sea, and forms the boundary between France and Spain.

§ 6. In regard to Gaul, his expression that it was divided

[2] iii. 1, §§ 10, 13.

[3] ii. 5, § 85. It is remarkable that he here applies the epithet of *British* (Britannicus) to the part of the Ocean north of Spain; and in another passage (i. 2, § 15) describes Europe as bounded by the Atlantic on the west, and by the British Ocean on the north.

into two parts by the Lake Lemannus and the mountains of the Cevennes, is not inappropriate, if we conceive a line drawn from one to the other; and this limit, which nearly coincides with that of the ancient Roman province, he takes, appropriately enough, as separating the part of the country which faces the Mediterranean from that which fronts the Ocean. On these Atlantic shores he gives a full and characteristic description of the remarkable estuary formed by the Garonne near its mouth (the Gironde), which must have appeared the more peculiar to persons unaccustomed to tidal rivers;[4] and notices at considerable length a small island called Sena, opposite to the land of the Osismii, in the British Sea, which was the site of a celebrated oracle, consulted by Gaulish navigators, and served by nine virgin priestesses.[5] The peculiar sanctity of this locality is not mentioned by any other writer, but the fact that the name is still retained by the little islet of Sein, off the extreme western coast of Bretagne, bears testimony to the accuracy of Mela's geographical information. He appears indeed to have taken some pains to inform himself on all questions connected with the religious creed and rites of the Gauls; and in another passage has given us an account of the Druids and their tenets, which is one of the most interesting notices we possess on this obscure subject.[6]

Of Britain, as we have seen, he announces that the world was on the point of receiving for the first time full and authentic information; but in the mean time he contents himself with giving a few particulars concerning its natural productions and the manners of its inhabitants, which generally accord with those given by Cæsar and Strabo. With regard to its geographical position he tells us that it extended between the north and west (*i. e.* in a direction from N.E. to S.W.), and was

[4] iii. 2, § 21.
[5] iii. 6, § 48.
[6] iii. 2, § 19. It may be remarked also that he mentions the Cassiterides in connection with Gaul, instead of Spain, to which they were generally referred ("*in Celticis* aliquot sunt, quas quia plumbo abundant uno omnes nomine Cassiteridas appellant," Ib. 6, § 47). Of any connection with Britain he had evidently no suspicion.

of a triangular form, like Sicily, having its main angle opposite to the mouths of the Rhine, and its two sides, receding from this, facing respectively Gaul and Germany; while the third side at the back (as he terms it) must have faced the Ocean to the north-west.[7] Beyond this lay Ireland, the name of which he writes Juverna, and describes it as nearly equal in extent to Britain, but of the form of an oblong parallelogram; and tells us that its climate was ill adapted for the growth of corn, but its pastures were so luxuriant that the cattle were obliged to be watched, lest they should burst themselves with over-repletion. But the inhabitants he says were quite uncivilized, and devoid of all the virtues of other nations.[8]

Imperfect as is this account, it is clear that Mela had a better idea of the position of the British Islands than Strabo, and did not place Ireland so far to the north. He is also the first extant writer who mentions the Orcades, which he correctly describes as a group of thirty islands near together. They had been discovered, as we have seen, in the reign of Claudius, and Mela may have had authentic information concerning them.[9] Of Thule on the contrary he evidently knew nothing beyond what he learned from the Greek writers, and merely repeats the customary story of the short summer nights, and that at the summer solstice there was no night at all, the sun being always visible.

§ 7. His knowledge of Germany was evidently very imperfect; but his account of it is rendered still more so, from the form and arrangement of his work affording him hardly any opportunity of describing the interior of that great country.[1] But with regard to its northern shores he appears

[7] iii. 6, §§ 49–52.

[8] Ibid. § 53.

[9] Ibid. § 54. He mentions also the Hæmodæ, seven in number, which must probably be a perversion of the name of the Hæbudes, as they are called by Pliny (*H. N.* iv. 16, § 103), but he strangely transfers them to the side opposite to Germany (*septem Hæmodæ contra Germaniam vectæ*).

[1] By a strange oversight, or deviation from established usage, he extends its southern limit to the Alps, thus including all Vindelicia, Rhætia, and Noricum, countries which were certainly never regarded by the Romans in general as comprised in Germany. Even the names of these provinces are not mentioned by Mela. It is perhaps connected with this error that he de-

to have had somewhat more information than his predecessors, though still in so vague and imperfect a form, that it is difficult to judge to what it actually amounted. Thus, after enumerating the well-known rivers which flowed into the German Ocean—the Ems, the Weser and the Elbe—he tells us that beyond the Elbe there is a very large bay, called Codanus, full of islands, large and small, of which the largest and most fertile was one called Codanovia.[2] This was inhabited by the Teutoni, who also, with the Cimbri, occupied the neighbouring mainland.[3] He seems also (though the passage is corrupt and very obscure) to have had some notion of the Cimbrian Chersonese, and the manner in which the sea formed narrow straits between the projecting continent and the neighbouring islands.[4] There can be no doubt that by the Codanus Sinus he meant the southern portion of the Baltic, which he of course regarded merely as a bay of the Northern Ocean; and we cannot hesitate to recognize in the large island of Codanovia the same which is mentioned by Pliny under the now familiar appellation of Scandinavia.

The easternmost people of Germany, according to Mela, were the Hermiones, whom he places on the northern ocean. They were separated from the Sarmatians by the Vistula, which formed the boundary between Germany and Sarmatia.[5] Of the countries east of that limit he had evidently no real knowledge. He gives indeed a full account of the manners and aspect of the Sarmatians, whom he describes as resembling the Parthians in their habits and mode of life: but does not

scribes the Danube as having its sources near those of the Rhone and the Rhine (ii. 2, § 79), so that he apparently supposed them all three to rise in the Alps.

[2] iii. §§ 31, 54. This is the reading of all the best MSS.; others have Codanonia. Some of the recent editors have altered it into Scandinovia, in order to approximate to the form found in Pliny, but there is no authority for this, and the name Codanovia certainly appears to be connected by Mela with the Codanus Sinus.

[3] iii. 3, §§ 31, 32; 6, § 54.

[4] Ibid. § 31.

[5] Ultimi Germaniæ Hermiones, § 32. As this is immediately followed by the mention of Sarmatia and the Vistula, there appears no doubt that the meaning of Mela is that stated in the text, but the words as they stand ("Sarmatia intus quam ad mare latior, *ab his quæ sequuntur* Vistula amne discreta") are unintelligible, or would convey a wholly different meaning.

attempt to define their geographical limits in any direction, and proceeds at once from thence to the Asiatic Scythians, the first of whom he tells us were the Hyperboreans dwelling beyond the Rhipæan mountains to the north. In their country the sun rose at the vernal equinox, and set at the autumnal, so that they had six months of day and six months of night. He adds the usual fables concerning their happy and virtuous life, their longevity, and the intercourse they had long maintained with Delos.[6]

§ 8. Passing from this region of fable he gives a pretty full account of the Caspian Sea and the nations that surround it, the names of which are correctly given, and are known from other sources.[7] But it is remarkable that while he adheres to the belief universally adopted in his day, of its communicating with the northern ocean, he distinctly states that it was joined to it only by a long and narrow strait *like a river*;[8] an expression that seems to point clearly to an increased knowledge of these regions, which would soon lead to the discovery that the supposed inlet from the north was in reality nothing but a river. It is strange that while the Oxus and Iaxartes on one side and the Tanaïs on the other, had been so long familiar both to Greeks and Romans, no notion of the great river Volga had yet reached their ears.[9]

Eastward of the Caspian he himself tells us that there was again an unknown region: and that it had long been considered uncertain whether there was sea, or continuous land

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[6] iii. §§ 36, 37. This account of the Hyperboreans almost exactly agrees with that of Pliny (*H. N.* iv. 12, §§ 89–91). Both were doubtless taken from the same Greek authors, and probably derived, whether directly or indirectly, from Hecatæus of Abdera, who had written a special work upon the subject.

[7] On this occasion he gives (§ 43) a long account of the Hyrcanian *tigers*, which evidently still enjoyed a great reputation among the Romans. The Indian tigers were probably still so rare as to be almost unknown. (See Chapter XX. Note C, p. 201.)

[8] "Mare Caspium ut angusto, ita longo etiam freto primum terras quasi fluvius irrumpit." iii. § 38.

[9] The name of the Rha, under which the Volga is mentioned by Ptolemy, is indeed found in the ordinary editions of Pomponius Mela (iii. 5, § 39), but it is a mere conjecture, introduced into the text by Pintianus, for which there is no authority, and has been justly rejected by the recent editors, Tzschucke and Parthey.

extending without limit, but uninhabitable on account of the cold. But he appeals to the story told by Cornelius Nepos of the Indians who had been driven by sea from their native shores to those of Germany, as decisive of the question; as indeed it would have been, had it had any foundation of truth.[1]

His account of the eastern extremity of Asia is peculiar: and though probably taken from earlier Greek writers contains some particulars not found in any other extant authority. He describes the coast of Asia as tending eastward from the Scythian Promontory—a name by which he apparently means to designate the north point of Scythia, east of the opening of the Caspian—to the shores that faced the east, where he places a mountain promontory, which he calls Tabis.[2] This is apparently the same that is called Tamarus by Eratosthenes, and was regarded by him as the eastern extremity of the great ridge of Mount Taurus, which traverses Asia from thence in its whole extent. Mela, however, in another passage gives the name of Tamus to a headland, which he appears to have regarded as distinct from Tabis, though the two were probably identical: and adds that off it lay the island of Chryse, or the Golden Island, while that of Argyre, the Silver Island, was opposite to the mouths of the Ganges.[3] Both these were probably mere fictions:[4] but it is remarkable that to the south of Tabis, between that headland and India, he places the Seres,

[1] After referring to the opinions of the ancient philosophers and Homer (!), he adds: "Cornelius Nepos ut recentior, auctoritate sic certior; testem autem rei Quintum Metellum Celerem adjicit, eumque ita retulisse commemorat: cum Galliæ pro consule præesset, Indos quosdam a rege Boiorum (?) dono sibi datos; unde in eas terras devenissent requirendo cognosse, vi tempestatum ex Indicis æquoribus abreptos, emensosque quæ intererant, tandem in Germaniæ littora exisse." iii. § 45.

[2] Mela is the first, so far as we know, to introduce into this part of Asia, between the Scythians and the Eastern Ocean, a nation of Anthropophagi, the fear of whom contributed, together with the cold and the number of wild beasts, to keep other nations at a distance, and render the whole tract a solitude (iii. § 59): a statement repeated by Pliny and by all the subsequent compilers.

[3] iii. §§ 68, 70.

[4] They here make their appearance for the first time; but we shall find them continually reappearing in the works of later geographers, both Greek and Roman, who endeavoured, with little success, to find a place for them, as these regions became better known.

"a nation full of justice, and well known for the silent commerce that they carry on in their absence with goods left in the desert."[5] It is singular that he makes no mention of the object of this commerce, as Pliny does in a parallel passage: but it is interesting to find that the Romans had by this time at least learnt, though in a vague way, that the Seres occupied a position in the far east of Asia.[6]

§ 9. Of India itself his knowledge is remarkably vague and imperfect. Though the Romans, as we have seen, were at this period rapidly extending their commercial relations with that country, and in consequence acquiring increased knowledge of its shores, Mela has not only given no sign of any such recent information, but his geographical statements are so confused and erroneous as to be in great part unintelligible; and it is clear from the summary manner in which he dismisses this part of his subject, that his views were very far from distinct. He gives us indeed a brief summary of the current stories concerning the natural productions of the country—the gold-seeking ants, the trees distilling honey, the wool-growing woods, &c.—as well as the manners and customs of its inhabitants: all derived from the ordinary Greek authorities: but his general description of its geography is confined to a short account of the Ganges and Indus, and the somewhat obscurely worded indication that the promontory of Colis or Collis, between the two, was the angle where the coast turned from the eastern to the southern sea: and therefore formed the south-eastern angle of Asia.[7] The whole extent of the shores of India, he tells us, was a voyage of sixty days and nights.[8] In regard to Taprobane he seems disposed to adopt

[5] iii. § 60. "Seres intersunt, genus plenum justitiæ, et commercio quod rebus in solitudine relictis absens peragit notissimum." This is evidently the same tradition mentioned by Pliny on the authority of the envoys from Taprobane (vi. 22, § 88).

[6] Mela had already stated at the outset of his treatise that the Indians, *Seres* and Scythians, were the most easterly nations known, and adds that the Seres were intermediate between the other two. ("Primos hominum ab oriente accepimus Indos et Seras et Scythas. Seres media ferme Eoæ partis incolunt, Indi ultima," i. 1, § 11.)

[7] iii. §§ 68, 69.

[8] Ibid. § 61.

the paradoxical opinion of Hipparchus, that it was not merely a large island, but the beginning of another world.[9]

§ 10. Of the remainder of Asia, from India to the Red Sea, his account is very brief, and by no means clear: but he had a distinct idea of the conformation of the coast, as forming a great bay, from which the two deep inlets of the Persian and Arabian Gulfs penetrated far into the interior of the continent. But his few notices of the nations that adjoined their shores are so imperfect and confused that he applies to the Carmanians the accounts given by other writers of the barbarous tribes of the Ichthyophagi on the coast of Gedrosia, and places the Gedrosians between them and the Persians.[1] It is a curious effect of the peculiar arrangement of his work that no place is found for the description of Persia, Media, or the other nations of Upper Asia, or even for Mesopotamia and Assyria, though he takes occasion in treating of the Persian Gulf to give a brief account of the Tigris and Euphrates. It is remarkable that he describes the latter river as no longer reaching the sea by an independent channel of its own, but gradually dwindling away and losing itself.[2] It would appear therefore that at this time the great mass of its waters was already, as at the present day, poured into the Tigris, while the rest was absorbed in the sands, or lost in the marshes.

§ 11. His account of Arabia, properly so called, is very concise, and shows no signs of acquaintance with any new sources of information, while that of the Arabian shores of the Red Sea—under which head he includes, in common with Strabo and other writers, the whole tract along its *western* shores, between the Sea and the Nile—is filled with fables concerning the Pygmies, the winged serpents and the phœnix. It is remarkable that we here again, as in the case of the Scythians, find him copying to a great extent from Herodotus, from whom he has also derived the fabulous account of the Ethiopians, their profusion of gold, their marvellous longevity,

[9] Ibid. § 70. [1] iii. 8, § 75. [2] Ibid. § 77.

and the Table of the Sun.[3] From the same source are taken the few particulars that he has given us with regard to the nations of the interior of Libya, the Garamantes, Atlantes, Augilæ, &c.: though in regard to these there are some confusions and changes of name that would appear to indicate their being derived from some intermediate author, and not *directly* from Herodotus.[4] In any case it is a sufficient proof of the uncritical character of the work in question, that our author has taken his materials from so early an authority, without any indication of their character or origin. It may be said indeed with regard to the treatise of Mela in general, that, with the exception of the countries immediately bordering on the Mediterranean, it was rather calculated to supply to its readers a compendious collection of the stories current with regard to different countries and their inhabitants, than to furnish them with any correct geographical information.

§ 12. Nowhere is this more apparent than in regard to the external coast of Africa, the description of which forms the concluding section of his work. Here indeed he had the advantage of being better informed with respect to the voyage of Hanno, than either Strabo or Pliny, and certainly had either seen the original narrative, or some authentic abstract of it. He correctly tells us that Hanno, after having circumnavigated a great part of Africa, setting out from the Western Straits, turned back, not from any difficulty of navigation, but from want of provisions.[5] On the other hand he accepts from Cornelius Nepos the erroneous statement that Eudoxus, setting out from the Arabian Gulf, had completed the voyage from thence to Gades; and rests upon this fact the conclusion that Africa was really surrounded by the Ocean.[6] He follows up these statements by a number of notices, more or less marvellous; some of them—such as that of the wild and hairy

[3] iii. 9, §§ 85–88. See Chapter VIII. p. 271.

[4] i. 4, § 23.

[5] iii. 9, § 90. "Hanno Carthaginiensis exploratum missus a suis, cum per oceani ostium exisset magnam ejus (Africæ) partem circumvectus, non se mari sed commeatu defecisse memoratu retulerat."

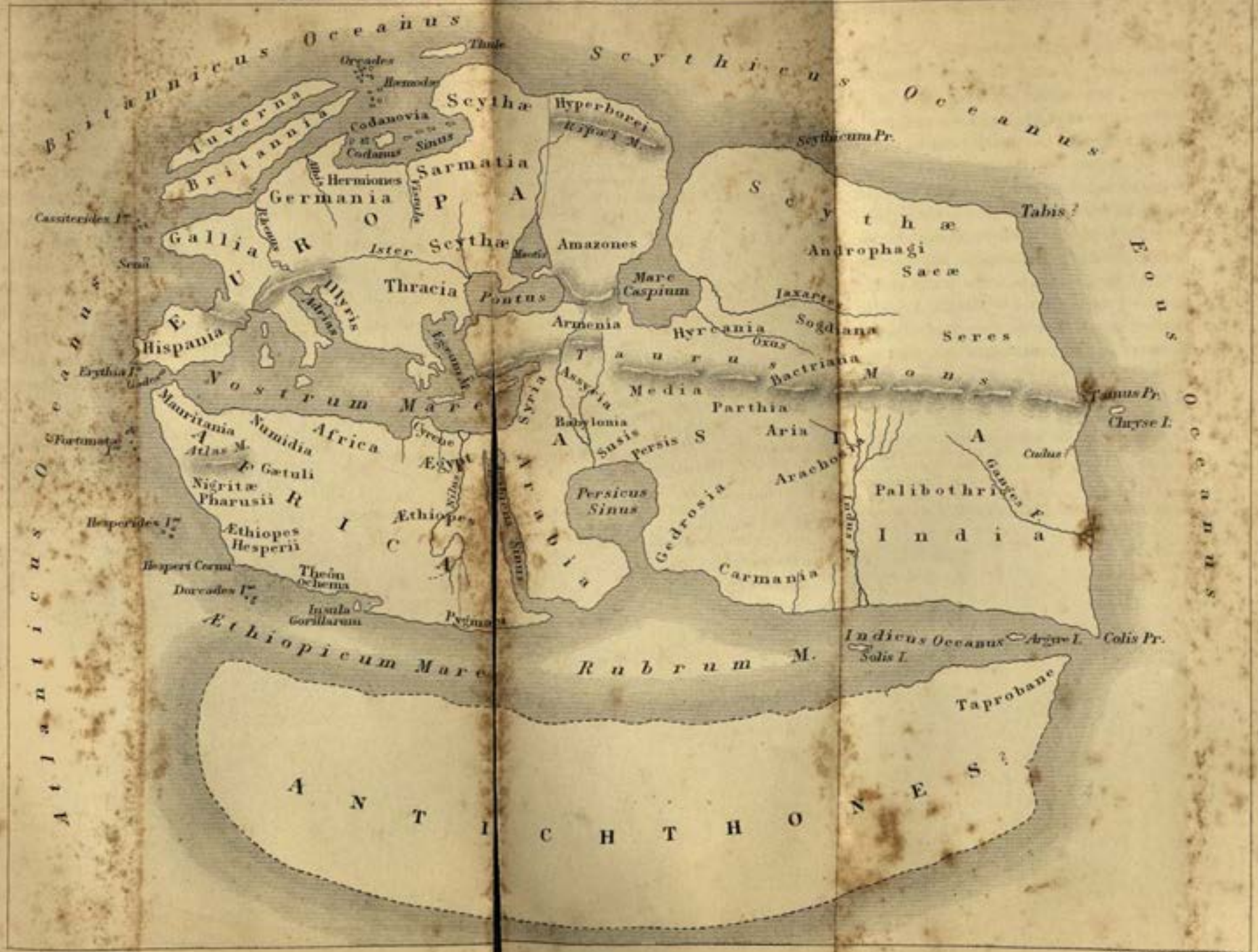
[6] Ibid.

women, the burning mountain called Theon Ochema, and the Promontory of the Western Horn — certainly taken from Hanno; but mixed up with tales of a purely fabulous character, of races of men without tongues, others without nostrils, others with legs too much bent to walk, and so on. It is not till he approaches the confines of Mauretania that he returns to anything like geographical accuracy; and here we find him, like Strabo, first mentioning the Pharusii and Nigritæ, then the Gætulians, whose shores abounded with purple of the finest quality.[7] He notices the Fortunate Islands only in a general way, without enumerating their names, or stating their number: and describes Mount Atlas in connection with this western coast, in a manner that clearly shows him to refer to the part of the mountain-chain that approaches the Atlantic, rather than to that more familiar to the Romans in the north of Mauretania.[8]

[7] Factories for the collection and manufacture of this purple had, as we have seen, been established by Juba; but no reference to his authority is found in Mela, nor are there any statements obviously derived from his work.

[8] iii. 10, § 101. This is the more remarkable as his native place was directly opposite to the northern arm of the Atlas, where it abuts on the Straits, and forms so conspicuous an object to all those that pass through them.

MAP OF THE WORLD ACCORDING TO POMPONIUS MELA.



London: John Murray.

NOTE A, p. 339.

BRITISH PEARLS.

TACITUS says with reference to them "Gignit et Oceanus margarita, sed suffusca et liventia:" and adds that their inferiority was said by some to be owing to a want of skill in collecting them. (*Agricola*, c. 12.) Pliny also says: "In Britannia parvos atque decolores nasci certum est" (*Hist. Nat.* ix. 35, § 116), and mentions that Julius Cæsar had consecrated in the temple of Venus Genitrix at Rome a corslet adorned with British pearls. Suetonius even asserts that Cæsar was induced to invade Britain for the sake of its pearls ("Britanniam petisse spe margaritarum," *Cæs.* c. 47), an idle story, which may however serve to show that great expectations were formed of them. It is well known that pearls of inferior quality are found at the present day in the rivers of Wales and Scotland: but they are the production of river mussels (the *Unio margaritiferus*, of naturalists), not of the true pearl-bearing oyster. It was therefore an error, though a very natural one, to suppose that they were produced in the Ocean, like the Indian and Oriental pearls. Pomponius Mela, singularly enough, was better informed, and expressly states that the British pearls were produced *in rivers*. "Fert (Britannia) . . . prægrandia flumina, alternis motibus modo in pelagus modo retro fluentia, et quædam gemmas margaritasque generantia" (iii. 6, § 51).

NOTE B, p. 340.

THE DUMNONII.

It is in any case a remarkable circumstance that the Dumnonii, whom we find in the time of Ptolemy occupying the whole of the south-western extremity of Britain, including both Devonshire and Cornwall (Ptol. *Geogr.* ii. 3, § 30), and who must therefore have been one of the most powerful nations in the island, are never once mentioned in the history of the conquest of the country by the Romans; nor is their name found in any writer before Ptolemy. Their name is also found in Solinus, c. 22, but in a passage of which both the reading and the sense are alike obscure: and the

word Dumnonii is in fact only a correction of the editors, though a plausible one. The conjecture of Mr. Beale Poste (*Britannic Researches*, p. 332), that they were left in nominal independence under a native king, who continued faithful to the Roman alliance, though wholly without authority, appears to me highly probable. In like manner we find them for a time leaving Sussex and some adjoining parts of England under a king named Cogidumnus or Cogidubnus (Tacit. *Agric.* 14). His name is found in an inscription discovered at Chichester, and given by Horsley (*Britannia Romana*, p. 332), and by Hübner (*Inscr. Britann.* p. 18), and the same thing was done in the first instance with the Iceni. It was only the tribes who opposed the Romans in arms that find a place in history. It is worthy of notice also that no Roman inscriptions have been found either in Devonshire or Cornwall. (See Hübner, p. 13.)

It is still more remarkable that no allusion is found in any of the Roman writers of this period to the tin of Cornwall, as one of the productions of the island. In the passage already cited from the *Agricola* of Tacitus, where he is enumerating the valuable products of Britain, which made it worth the conquest (pretium victoriæ), while the insignificant pearls are mentioned, no notice is taken of the far more important article of tin, except as comprised in the vague and general expression "alia metalla."

NOTE C, p. 353.

THE AGE OF MELA.

All modern editors and writers on geography acquiesce in this conclusion. Some of the earlier editors supposed the expedition of Caligula to be meant, but that abortive attempt was of too brief duration to render it probable that it was the one referred to. The earlier date adopted by some scholars, who supposed the expedition of Julius Cæsar to be the one referred to, is excluded by many statements in the work of Mela, such as the name of Cæsarea given to Iol, which it first received from Juba; the division of Spain into three provinces, first introduced by Augustus, &c. But the very epithet applied to the conqueror of "principum maximus" would never have been employed by any writer before the Augustan age.

CHAPTER XXIV.

PLINY.

SECTION 1.—*General Views.*

§ 1. FAR more important than the abridgement of Pomponius Mela was the geographical treatise included in the comprehensive work of the elder Pliny, to which he gave the name of Natural History, or as it would be more correctly translated, a History of Nature. In this great work,—for, with all its defects, it fully deserves that epithet—he attempted to give a general view of all that was known in his day of the physical constitution of the universe, and of this world in particular, as well as of all its productions, whether animal, vegetable, or mineral. Hence he himself speaks of it as including all those subjects, which were comprised by the Greeks under the name of ἐγκυκλοπαίδεια;[1] in modern phraseology, it comprehended at once physical philosophy and natural history in all their branches. The portions which relate to the fine arts, painting and sculpture, which are at the present day among the most valuable parts of the work, though occupying the greater part of three books, are mere digressions, having very little connection with its general plan and purpose.

In this instance we have, by a rare piece of good fortune, full information not only concerning the life of the author, and the exact date of the publication of his work, but we possess unusually full particulars concerning his mode of

[1] Præfat. § 14. We have here the first application of the term which is so familiar to us in modern times of an Encyclopædia. It is strange that the compilers of Greek Lexicons all reject the word as a barbarous compound, without adverting to its use by Pliny, who moreover distinctly employs it as one already familiar ("jam omnia attingenda, quæ Græci τῆς ἐγκυκλοπαιδείας vocant").

study and the manner in which he amassed the materials for so vast an undertaking, which it is very important to bear in mind in estimating the value of the results transmitted to us.

§ 2. CAIUS PLINIUS SECUNDUS, commonly known as PLINY the ELDER, to distinguish him from his nephew of the same name, was born in A.D. 23, either at Verona or Comum in the north of Italy—it is uncertain which,—and filled various public offices, among others that of procurator in Spain, which he held during the last years of the reign of Nero. After the accession of Vespasian he became the intimate friend of that emperor, as well as of his son Titus, to whom he dedicated his great work. Among other employments he was appointed by Vespasian to the command of the Roman fleet at Misenum, and was stationed there in A.D. 79 when the great eruption of Vesuvius took place, which overwhelmed Herculaneum and Pompeii, and in which he lost his life, under the circumstances related by his nephew in a well-known letter.[2] We learn from the same authority that besides the work to which he owes his fame, Pliny had already composed several other literary works, some of them of a voluminous character; the most important of which were, a History of the Wars in Germany, in twenty books, the loss of which is much to be regretted in a geographical as well as historical point of view; and a History of his own Times, in continuation of the work of Aufidius Bassus, which extended to thirty-one books, and included apparently a portion at least of the reign of Vespasian.[3] Both these works appear to have enjoyed considerable reputation, and to have been frequently used by later writers, though they were in great measure eclipsed by those of Tacitus, who possessed those qualities of a truly great historian which were certainly wanting in Pliny.

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[2] Plin. *Epist.* vi. 16. For fuller particulars concerning the life of Pliny, see the article PLINIUS in Dr. Smith's *Dict. of Biography*; and the introduction to Urlich's *Chrestomathia Pliniana*, Berlin, 1857.

[3] Plin. *Epist.* iii. 5. The latter work is alluded to by himself in the preface to his *Natural History* (§§ 19, 20). It appears that it was then completed, but had not yet been published.

It was not therefore till a comparatively advanced period of life that he devoted himself in earnest to the composition of his Natural History;[4] but he had long before been occupied with preparing the materials for it. It must have been mainly with a view to this object that he had accumulated the mass of notes and extracts from his multifarious reading of which his nephew has given us so lively a picture, and to which he himself refers in the elaborate preface which he has prefixed to his work. He tells us himself that he had read about 2000 volumes, out of which he had collected 20,000 facts worthy of notice; and boasts that almost all this had been accomplished at spare hours, especially at night.[5] He was in the habit of reading or having books read at his meals, in the bath, while travelling, or taking exercise,—in short, at every available moment; and always making notes or extracts from all he read.[6] Such a miscellaneous *farrago* of materials would obviously require a sound critical spirit to distinguish the valuable from the worthless, and a highly scientific turn of mind to co-ordinate this mass of facts into any clear and lucid arrangement. Unfortunately Pliny was almost wholly destitute either of the one quality or the other. He himself boasts with some reason that he has undertaken a task, which as a whole had not been attempted by any previous writer, either Greek or Roman;[7] and he has been justly praised by Humboldt for the grandeur of the conception that he had formed, in this first essay towards a physical description of the Universe.[8] But the same author admits how very far the execution of his work fell short of the original idea, not only from defective arrangement and want of method,—"the elements of a general knowledge of nature lying scattered almost without order in

[4] His work was completed and published in A.D. 77, only two years before his death, as we learn from the preface, § 3, in which he dedicates it to Titus, in his sixth consulship. How long before it was actually commenced we have no means of judging.

[5] *Præfatio*, § 17.

[6] Plin. J. *Epist.* iii. 5.

[7] *Præf.* § 14. "Nemo apud nos, qui idem tentaverit, nemo apud Græcos qui unus omnia ea tractaverit."

[8] Humboldt's *Cosmos*, vol. ii. p. 195, *Engl. transl.*

his great work"—but from the want also of that scientific insight into his subject without which it was impossible to weave his accumulated mass of materials into an organized or harmonious whole.[9] His voluminous treatise remains in consequence a vast compilation, bearing testimony to the unwearied diligence of its author in the collection of his facts, but showing at the same time an almost total want of critical judgement or philosophical arrangement.[1]

§ 3. The great naturalist Cuvier has pronounced a strong censure upon that part of Pliny's work which relates to what is now commonly known as natural history; and has shown how far inferior he was in this department to his great predecessor Aristotle.[2] The same remark may be applied with even greater force to the geographical portions, which are perhaps on the whole the most defective parts of the whole work. When we compare them with the writings of Eratosthenes and Strabo, we are struck with the almost total absence of any scientific comprehension of his subject, or of those general views which, however imperfectly developed, were certainly present to the minds of the Greek geographers. Instead of any geographical outlines of the general structure and composition of the continents, or of the several countries that compose them, we find for the most part mere dry catalogues of the names of cities, or tribes, rivers and mountains; sometimes arranged with reference, more or less carefully observed, to the lines of coast; but generally, especially where the interior of a country is concerned, enumerated in alphabetical order, or jumbled together without any arrangement whatever.

The use of maps, as we have seen, was already familiar in

[9] Ibid. pp. 195–198.

[1] How much he prided himself upon the mere accumulation of facts, without reference to the scientific use made of them, or the value of the authorities from which they were derived is shown, not only by the tone of self-complacency with which he dwells in his Preface on what he had accomplished in this respect, but by the statement appended to the summary of each book of the number of such facts, or rather statements (res et historiæ et observationes) which it contained.

[2] Cuvier in the *Biographie Universelle*, art. PLINE. See also the remarks of Humboldt, *l. c.* p. 197.

the days of Pliny, and he had the advantage among others of consulting that prepared by Agrippa on a large scale, to which we have already adverted.[3] It is obvious from internal evidence that his enumeration of towns, headlands, bays and other natural features of the coasts, was taken in many cases from such authorities, and in these instances he often supplies us with a *paraplus* of considerable value from the number of names and details which it furnishes; but where this guide is wanting, we have generally no geographical indication whatever to point out the site of the places enumerated. In no instance does he attempt to determine their position by reference to latitude and longitude, in the manner pointed out by Hipparchus, and subsequently developed by Ptolemy. Nor do we find him, except in a very few cases, making any use of the great lines of Roman highway, which being in his time already extended to almost all parts of the Empire, might have afforded to a geographer much assistance in explaining the position of the towns and cities through which they passed.[4]

Another grave defect is the want of chronological discrimination in the use of his authorities. He makes use of the earlier Greek writers, such as Eratosthenes or the historians of Alexander, as if they stood on the same footing with recent or contemporary authors; and frequently mixes the two sets of authorities together, without any attempt to distinguish them. This is especially the case with regard to Asia, his account of which is much like what would be produced by a modern writer, who attempted to blend together the geography of Marco Polo and Ibn Batuta with the results of the most recent

[3] See Chapter XX. p. 177.

[4] There cannot be a stronger proof of this than his omission of all notice of the Egnatian Way, which, besides its own importance as the great high-road between Europe and Asia, was an invaluable assistance to the geographer in regard to the confused and difficult geography of Macedonia and Thrace. Its importance in this respect had (as we have seen) been fully recognised by Polybius and Strabo (see Chapter XVII. p. 27). It is even more singular that where he gives the actual distance from Dyrrhachium to Byzantium (iv. § 46), which could only have been measured along this road, he greatly understates it, making it only 711 M. P., while the real distance was 754 miles (*Itin. Ant.* p. 317).

English and Russian researches, without any reference to the different sources from which his statements proceeded.

§ 4. The great value of Pliny's work really lies in its important contribution to the political or statistical geography of the countries that were in his time organized as provinces under the Roman Empire. We have already pointed out[5] how much the extension of the imperial administration must have tended to this end; and the circumstance of Pliny having himself filled important public offices, both at Rome and in the provinces, must have secured him full access to official documents, as well as drawn his attention to their value and importance. It is unfortunate that, in availing himself of these resources, he confined himself to the mere nomenclature of geography, or to collecting scattered notices of individual facts for his natural history: he never appears to have sought to combine these into one organic whole, or to present such a picture of a country, including its natural features, characteristics and productions, as is essential to the politician or historian, not less than the geographer. This deficiency is apparent even with regard to those countries, with respect to which he had the best means of information, such as Spain and Gaul, of neither of which does he give us anything like a general picture, or characteristic description, such as those presented to us by Cæsar and Strabo, any more than a clear geographical outline.

Pliny himself indeed repeatedly apologizes for the hasty manner in which he runs over his descriptions of countries, on account of the necessity of brevity, and that he is hastening on to the more essential parts of his subject. But these considerations do not prevent him from filling page after page with voluminous lists of obscure names, while he omits almost entirely to point out the leading geographical features of each country, or describe the natural characters that distinguish it. It is still more remarkable that he scarcely attempts to give

[5] See Chapter XX. p. 176.

any account of the characteristics of the inhabitants of each region, of their manners and customs, or even of their physical peculiarities. Such notices, one would have thought, would have found their place with peculiar appropriateness in a geographical treatise designed as an introduction to a general History of Nature. But so completely has Pliny left aside this important branch of his subject, that he is inferior in this respect not only to the great work of Strabo, but even to the summary compendium of Pomponius Mela. It is strange to find an author who aspires to give a complete natural history of the world ignoring altogether the natural history of Man, and the distinctive peculiarities, whether physical or acquired, of the different races that people the surface of the globe.[6]

§ 5. But if he thus entirely misconceived the nature of the problem with which he had to deal, and the task that he had undertaken, in one branch of his subject at least he sought, though with little success, to contribute to the domain of positive geographical knowledge, by the introduction of numerous measurements of distances. These statements are in all cases derived from previous authorities, frequently without naming them, and for the western parts of Europe, including Italy, are probably for the most part taken from Agrippa, whom he himself in one passage extols as worthy of especial confidence.[7] In many other cases they are obviously derived from *peripli*, or descriptions of the coasts of the Mediterranean, Euxine, &c., such as were so common in ancient times, and so necessary for navigators when latitudes and longitudes were practically unknown.[8] For the eastern parts of the Mediterranean and

[6] The seventh book indeed contains a large assemblage of facts concerning the nature of man, his physical and mental qualities; but not even an attempt at anything like an ethnographical review of the physical peculiarities and characters of the different varieties of mankind. At the same time no portion of Pliny's work contains a greater accumulation of fables and absurd stories; many of them taken from Isigonus of Nicæa, and other authors who belonged to the class of παραδοξογράφοι or avowed collectors of marvellous tales. (See especially c. 2, §§ 9–32.)

[7] iii. 2, § 17. See Chapter XX. p. 177.

[8] Among Roman writers, besides Agrippa, he frequently cites the authority of Varro, by which name he probably means Varro Atacinus, not the elder and more celebrated writer of the name. See Chapter XX. p. 171.

for Asia, he falls back for the most part upon Greek writers, especially Timosthenes, Artemidorus and Isidorus, while for the more remote provinces of Upper Asia he chiefly followed Eratosthenes.[9]

It would be unjust to deny that the distances thus given by Pliny are frequently of considerable value, especially where they are measured along the coasts: while others are of interest in enabling us to understand and reconstruct the geographical systems of earlier writers. But the point that is most remarkable throughout, is the want of any attempt on the part of Pliny himself to reconcile, or even discuss, the discrepancies between them. Where he met with divergent statements, he simply contents himself with repeating them, without any attempt to determine between them, or to pronounce in favour of the one system or the other. Strabo indeed was frequently compelled to do the same thing; but, as we have seen, he often also exercised an independent judgement, and while he in general followed the authority of Eratosthenes, whose system he has set forth in a clear and intelligible manner, he at other times departed from his views, and set up a scheme of his own, frequently indeed less correct than that of his predecessor, but for which he gives his reasons, and works out his conclusions in an intelligible form. Both Strabo and Eratosthenes had a clear idea of what scientific geography ought to be, however defective might be their materials, and their conclusions in consequence erroneous. Pliny on the contrary had no conception of scientific geography at all, and does not attempt to enter into any discussion on the subject. It was enough for him to take the materials that he found ready to his hand, without attempting to frame them into one consistent whole: and though he has in this manner occasionally preserved to us passages and statements of much scientific value, it has been without any indication that he himself appreciated their importance, or sought to distinguish them

[9] See vi. §§ 3, 36, 56, &c.

from the mass of miscellaneous matter by which they are surrounded.

§ 6. Nowhere are these defects more conspicuous than in the second book,[1] in which he gives a general view of all that was comprehended by the ancients under the name of Meteorology, a term which they applied in a much more general sense than it is employed at the present day, as including all that was known of the celestial bodies, the sun, moon, and five planets, as well as the phenomena of comets and falling stars, meteors, thunder and lightning, the seasons, winds, and tempests, as well as volcanoes and earthquakes. With regard to the general questions concerning the earth itself, its position, and relations to the other bodies of the universe, Pliny acquiesces in the system that was generally received in his day, and had been clearly expounded by Posidonius: he describes briefly but correctly the courses of the planets, and explains the cause of the eclipses both of the sun and moon. But it is remarkable that while he bestows well-merited praise upon Hipparchus for the astronomical skill that had enabled him to predict eclipses and publish tables of them for six hundred years to come,[2] he censures him for his excessive, and "almost impious" daring, in attempting to catalogue the fixed stars, and determine the place of each, so that future astronomers might note whether any changes really occurred in them.[3] He applies the same epithet to the attempt of Eratosthenes to determine the circumference of the earth, though he admits

[1] The first book contains only the table of contents of the thirty-six books that follow, which was drawn up by Pliny himself with a view to facilitate reference to the different topics specially treated of. It was designed in the first instance for the use of the emperor Titus, to whom the work was dedicated, but would serve, as Pliny remarks, for the convenience of others also (*Præfat.* §§ 32, 33). He has added at the end of the summary of each book, a list of the authors from whom it was compiled; a very interesting and valuable addition, but it must not be supposed that he had consulted them all in the original. He certainly often takes his facts, even where he cites his authorities, at second or third hand.

[2] ii. 12, § 54.

[3] ii. 26, § 95. "Ideoque ausus *rem etiam deo improbam*, adnumerare posteris stellas ac sidera ad nomen expungere." Such a censure seems the more remarkable as coming from one whose creed was a philosophical pantheism. See the fine passage with which he opens the second book.

that his process of reasoning was so ingenious, that it was impossible not to believe it.[4] It was indeed (he says) generally adopted, though Hipparchus had corrected it by the addition of about 26,000 stadia.[5]

This strange incapacity of appreciating the great scientific conclusions of the Greek astronomers who had preceded him was coupled with a ready and almost childish belief in such absurd notions as that of the germs of all creatures falling from the figures of them impressed on the outer circle of the heavens, and that these, when they fell into the sea, frequently became mingled together, and thus gave birth to monstrous and unnatural forms.[6] On the other hand he justly rejected the popular notion, which appears to have been current in his day, of the astrological influences of the stars upon the human race, or that every man had his star, associated with him from his birth, and that each falling star marked the decease of the human being to whom it belonged.[7]

§ 7. Imperfectly as Pliny evidently understood the mathematical conclusions of his predecessors, he at least clearly comprehended those which had the most immediate bearing upon geography,—the obliquity of the ecliptic, and its influence upon the seasons, the variation in the length of day and night according to the latitude, the appearance of certain stars above the horizon from the same cause, and so on. And he correctly argues in favour of the globular figure of the earth, from the manner in which ships, lights, and high land disappear below the horizon.[8] The same thing is shown, he adds,

[4] ii. 108, § 247. He terms it "*improbum ausum*, verum ita subtili argumentatione comprehensum, ut pudeat non credere."

His statement that it was generally adopted (quem cunctis probari video) is confirmed by the manner in which it is referred to by Vitruvius (*de Architectura*, i. 6, § 9) as a conclusion universally recognized. The different estimate formed by Posidonius would appear therefore to have been either overlooked or discredited.

[5] Concerning the difficulty raised by these words, see Chapter XVII. p. 3, note.

[6] ii. 3, § 7.

[7] ii. 8, § 28. "Nec cum suo quæque homine orta moriuntur, nec aliquem extingui decidua significant." This is the first allusion I have found to the beautiful superstition, of which such poetical use has been made in the well-known song of Béranger, "Les étoiles qui filent."

[8] ii. 65, § 164.

by the fact that certain stars and constellations are visible in some countries and not in others. Thus the Great Bear is not visible in the land of the Troglodytes (Ethiopia) or the neighbouring parts of Egypt, nor is the bright star called Canopus visible in Italy or the Euxine, while at Alexandria it rises the fourth part of a sign above the horizon, but at Rhodes it only just skirts it.[9] The Great Bear in like manner began to set at Rhodes, and still more at Alexandria, while at Meroë it was only visible during a short period of the year.

In another passage he correctly describes the gradual lengthening of the solstitial day, from Meroë where the longest day was only $12\frac{1}{8}$ hours, to fourteen hours at Alexandria, fifteen in Italy, and seventeen in Britain, where, he adds, the lightness of the summer nights already promises that which is proved by reasoning, that the parts of the earth nearest the pole have six months continual day in summer, and in like manner six months continual night in winter.[1] Here his reasoning is perfectly sound, but when he adds that Pytheas the Massilian writes that this is actually the case in Thule, an island six days' voyage to the north of Britain, it is almost certain that he either misconceived or misrepresented his authority.[2]

It would be interesting to know whether this was also the case when he cites from Onesicritus and other writers statements concerning the astronomical appearances in India, which are almost as erroneous as that just quoted concerning Thule. The shadow falling to the south—a fact which can of course only occur within the tropics, and even there for a short

[9] ii. 70, § 178.

[1] Ibid. 75, § 186.

[2] ii. 75, § 187; iv. 16, § 104. "Quod fieri in insula Thule Pytheas Massiliensis scripsit." See Chapter XV. Note H, p. 613. The still stranger assertion that, "according to some," the same thing took place in the island of Mona, "about 200 miles from Camalodunum, a town of Britain," is a striking instance of the utterly uncritical character of Pliny's mind, which could think such absurdities worthy of insertion, without even a passing word of refutation. It seems not impossible that this misconception may have arisen from the passage of Cæsar (*B. G.* v. 13), where, after describing Mona, he speaks of the astronomical phenomena reported to occur in *other* islands not far from Britain. See Chapter XIX. p. 128.

period only, until one approaches the equator, is stated to have been observed *at Pattala* during the stay of Alexander's fleet; and the same statement is repeated concerning other places in the northern parts of India, known to the Greeks, all alike outside the tropics. Here it appears more probable that the erroneous or exaggerated accounts were really found by Pliny in his original authorities:[3] but there are unfortunately abundant proofs throughout his work how careless he was in the use of his materials, and how little pains he took to ascertain the true meaning of the authors whose works he had consulted, and whose authority he cites. A single passage will sufficiently exemplify this.

§ 8. After stating in accordance with the view generally established in his time, that the earth was surrounded by a complete belt of water, so that the inhabited portion of it was bounded on all sides by the ocean, he adds, that this was no longer a matter of proof by argument, but had been established by direct investigation.[4] "From Gades to the Columns of Hercules" (he tells us) "around the shores of Spain and Gaul, the whole of the west is at the present day well known to navigators. The Northern Ocean was also navigated for the greater part under the auspices of Augustus, his fleet having coasted round Germany to the Cimbrian Promontory, and from thence looked out upon a boundless sea, which was reported to extend to the region of Scythia and the parts chilled by excess of moisture. For which reason" (he observes) "it is most improbable that the sea should be wanting where there is the greatest amount of moisture.[5] Beyond that again, the whole coast from the East, and from the Indian Sea, extending round in the same latitude to the Caspian, was navigated by the Macedonian fleets under the reign of Seleucus and Antiochus. In the neighbourhood of the Caspian also many shores of the

[3] See this point discussed in a note to the Voyage of Nearchus, Chapter XIII. Note E, p. 535.

[4] "Nec argumentis hoc investigandum, sed jam experimentis cognitum," ii. 66, § 166.

[5] No further development is found in Pliny of this strange speculation.

ocean have been explored, and but little is wanting for the whole of the north on both sides to have been visited by navigators. But as if to leave no room for conjecture, the Palus Mæotis affords a strong argument [of the proximity of such a sea], whether it be, as many believe, an inlet of the ocean, or a back-water (restagnatio), separated from it by a narrow strip of land. On the other side, beginning from Gades on the west, a large part of the southern coast around Mauretania is at the present day frequented by navigators. The greater part of this southern sea and of the eastern coast was made known by the victories of Alexander, as far as the Arabian Gulf, in which, when Caius Cæsar the son of Augustus held the command, portions of wrecks are said to have been recognized as derived from ships of Spanish origin. And while the power of Carthage was at its height, Hanno made the passage round from Gades to the borders of Arabia, and left a written account of his voyage; as did also Himilco, who was sent out at the same time to explore the outer coasts of Europe.[6] Moreover Cornelius Nepos states that within his own time a certain Eudoxus, seeking to escape from king [Ptolemy] Lathyrus, set out from the Arabian Gulf and accomplished the passage to Gades, and long before him Cælius Antipater asserts that he had seen a merchant who had sailed from Spain to Ethiopia for the sake of trade." He then repeats the story told by Cornelius Nepos of the Indians who had been driven by storms round the northern shores of Asia and Europe to the coast of Germany.[7]

It would be difficult to find a stronger instance of the promiscuous manner in which Pliny raked together his materials, or of the total want of critical judgement, or even common accuracy with which he made use of them. We have already

[6] This is the first mention we find of the voyage of Himilco, and the only notice of it that occurs in Pliny, though his name, as well as that of Hanno, is found in the list of his authorities for the book. The subject will be discussed when we come to the work of Avienus, to whom we are indebted for what little knowledge we possess concerning it.

[7] ii. 67, §§ 167–170. See Chapter XXIII. p. 364.

seen what was the real extent of the exploration of the northern coasts of Europe under Augustus; but on this point at least Pliny only reflected the popular impression of his time, confirmed by the statement of Augustus himself.[8] With regard to the alleged voyage of the Macedonians from the Indian Ocean to the Caspian, we have also seen what was the real foundation of the story, and how carefully Strabo distinguishes the assertion of Patrocles that it was *possible*, from the popular idea that it had been actually accomplished. In like manner the statements concerning the voyages of Hanno and Eudoxus are altogether perverted and misinterpreted; while the story of the Indians told by Cornelius Nepos must be in great part, if not altogether, a fiction, and the supposed discovery of the figure-heads of Spanish ships in the Red Sea recalls the similar tale told by Eudoxus, of which it is probably only a repetition. The strange argument derived from the supposed proximity of the Palus Mæotis, is one of those curious instances of subtle arguments based upon no foundation at all, which are not uncommonly found in the later Greek writers. But it is singular that Pliny did not see how completely this hypothesis was at variance with the well-known fact that the Tanaïs flowed into the Palus Mæotis, and with his own statement that it had its sources in the Rhipæan Mountains, far to the north of that sea.[9]

§ 9. The notices collected by Pliny concerning earthquakes, volcanic eruptions, and other physical phenomena, are not without value, some of his facts being otherwise unknown. But his philosophical remarks and conclusions are of the most futile character, and we find no trace of the sagacious observation of Strabo, who pointed out the obvious signs of volcanic action in countries where no outbreaks of the kind had been recorded, and thus led the way to the acknowledgement of the important part borne by these forces in remodelling the surface of the globe.

[8] See Chapter XX. p. 190.

[9] iv. 12, § 78.

With regard to the height of mountains—an important branch of physical geography generally neglected by ancient writers—he quotes the statement of Dicæarchus, that Pelion, which was the highest mountain he had measured, did not exceed 1250 paces (6250 feet) in perpendicular altitude; but adds that some of the highest summits of the Alps rose with a continuous slope for a distance of not less than fifty miles.[1] Elsewhere he speaks of the elevation of Mount Hæmus as attaining to six Roman miles.[2] But probably he does not in either case mean to represent this as the perpendicular altitude.[3] It would be curious to know on what foundation a writer named Fabianus (whom he cites as his authority) had arrived at the conclusion that the greatest depth of the sea was fifteen stadia.[4]

§ 10. Pliny concludes his second book with a discussion of the various measurements that had been given of the length and breadth of the inhabited portion of the earth. Adopting, as we have seen, the general conclusion of the Greek geographers, that this was surrounded on all sides by the ocean, so as to constitute in fact a great island, he adopted also their view, that its greatest length from east to west much exceeded its breadth from north to south. In repeating the estimates that had been formed of its dimensions, it is remarkable that he

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[1] ii. 65, § 162.

[2] iv. 11, § 41. It is more strange that he should describe Saoce, the central peak of Samothrace, which is really only 5240 feet high, and far inferior to the neighbouring Athos, as *ten miles* in height. Ibid. 12, § 73.

[3] This appears to me certainly to be the natural construction of the first passage, where he says: "Mihi incerta hæc videtur conjectatio, haud ignaro quosdam Alpium vertices longo tractu nec breviore quinquaginta millium passuum adsurgere." But the words have been frequently understood as implying that this was their actual height, or perpendicular elevation; an absurdity that we have no right to force upon our author, when his words will fairly admit of another meaning.

[4] "Altissimum mare xv stadiorum Fabianus tradit." ii. 102, § 223. This Fabianus is doubtless the same author whom he quotes in one of his latest books under the name of Papirius Fabianus, and terms "naturæ rerum peritissimus" (xxxvi. 15, § 125). He was a friend of the elder Seneca, and published many works of a philosophical, as well as others of a rhetorical character. Posidonius, as we have seen, estimated the greatest depth of the Mediterranean at 1000 fathoms, equal to ten stadia. (See Chapter XVIII. p. 98.)

altogether omits those given by Eratosthenes, which are so fully discussed by Strabo, and contents himself with giving the statements of Artemidorus, and comparing with them those of Isidorus.[5] The former have been already fully discussed.[6] The value of Isidorus as an authority we have no means of estimating: and Pliny merely gives his general results, without any details of the calculation on which they were founded. It appears that he estimated the total length of the world from India to Gades at 9818 Roman miles, (78,544 stadia), while Artemidorus made it only 8568 miles, or 68,545 stadia: while in regard to its breadth, he made an addition of not less than 1250 miles to the north, from the mouth of the Tanaïs to the parallel of Thulè, a proceeding that is justly censured by Pliny as a mere conjecture,[7] but he adds that the extent of the territory occupied by the Sarmatians towards the north was undoubtedly very great.[8]

He concludes with referring to the measurement of the circumference of the earth, by Eratosthenes; but cannot refrain from adding a foolish story, which he himself discredits, of a certain Dionysodorus, a mathematician of Melos, in whose tomb was found a letter stating that after his death he had penetrated to the centre of the earth, and that the distance was 42,000 stadia. (!)[9] As this would be the radius corresponding (in round numbers) to a circumference of 252,000 stadia—it is evident that the fiction was invented in order to support the received calculation of this measurement. It seems not im-

[5] This Isidorus is probably identical with the author of the little work (Σταθμοὶ Παρθικοί) still extant under the name of Isidorus of Charax, but the statements in question must have been taken from another work. See Chapter XX. p. 164.

[6] See Chapter XVIII. p. 64.

[7] "Quæ conjectura divinationis est." ii. 108, § 246. It is evident that Isidorus followed the same general view as Eratosthenes, in thus carrying the continent of Europe far to the north, to correspond with the assumed latitude of Thule. But his addition is so large as to be unintelligible, if the figures given by Pliny are correct.

[8] He seems even to think that it might not be less extensive than the estimate given by Isidorus—"Ego non minore quam proxime dicto spatio, Sarmatarum fines nosci intelligo." *l. c.* In adopting this view he must have entirely forgotten his own argument for the proximity of the Palus Mæotis to the Northern Ocean.

[9] ii. 109, § 248.

probable that the statement as to the distance had really been made by Dionysodôrus, and the story afterwards perverted into the strange form in which it is repeated by Pliny.

SECTION 2.—*Descriptive Geography.*

§ 1. Pliny next proceeds to the detailed description of the different countries of the world. Here he follows an order different from that of Mela, but scarcely less inconvenient. Beginning from the Strait of Gades (as he calls that of Gibraltar) he follows the northern coast of the Mediterranean, describing the parts of Spain and Gaul adjoining that sea; then the western portions of Italy, down to the Bruttian Promontory and Locri; after which he gives a brief account of all the islands in this western portion of the Mediterranean, including Sardinia, Corsica, and Sicily: then he returns along the coast of the Adriatic, describing the eastern portions of Italy, with Cisalpine Gaul and Venetia, and in connection with these the Alpine nations, including the Rhætians and Vindelicians. Thence he descends along the opposite coast of the Adriatic through Liburnia and Dalmatia, both of which he includes in Illyricum, to the Acroceraunian Promontory, which he considers as the limit of the second section of southern Europe:[1] he then adds a brief account of the provinces of the interior, Noricum, Pannonia, and Mœsia, and notices a few of the islands on the Illyrian coast. The fourth book begins with a long and detailed, but extremely unsatisfactory, description

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[1] Here he is certainly following a kind of geographical arrangement; for he begins with telling us that the sea indents Europe with many recesses, but especially with four principal gulfs (sinus), iii. 1, § 5. The first of these he conceives as extending from the promontory of Calpe in Spain to that of Locri (Leucopetra) in Italy; the second, from the same promontory to that of Acroceraunia; and the third, from thence to the Hellespont. "Tertius Europæ sinus Acroceraunii incipit montibus, finitur Hellesponto." In what sense the term "sinus" can possibly be applied to this portion of the Mediterranean it is difficult to conceive. Had he taken either of the southern promontories of the Peloponnese it would have furnished something like a natural limit.

of Greece, followed by Macedonia and Thrace to the Hellespont: then follows a very long and minute enumeration of the Greek islands; after which he returns to Thrace, describing the coasts of the Euxine and the adjoining nations, the Getæ and Scythians, as far as the Palus Mæotis and the Tanaïs, in connection with which he repeats the fable of the Rhipæan Mountains and the Hyperboreans. Thence he crosses these mountains[2]—which he evidently pictured to himself as a range running parallel with the ocean, and bounding the European Scythians to the north—to the shores of the Northern Ocean, and follows these westward back to Gades. His notices of the coasts and islands of the Northern Ocean are, as might be expected, very few and scanty, and even those of Germany singularly meagre. The same is the case also with Britain and Ireland, which he next mentions, while he is of course able to give a copious list of the towns and tribes of the external provinces of Gaul and Spain, as he returns along their coasts to Gades and the Straits from whence he set out.

§ 2. There was doubtless no province of the Roman Empire with which Pliny was more familiar, or concerning which he had better means of information, than Spain, in which he had himself filled the office of Procurator, or civil governor.[3] But for that very reason we are the more struck with the extremely imperfect character of the description he has left us, considered in a geographical point of view. In fact, he can hardly be said to have given us any geographical account of it at all; a deficiency the more striking as the strange manner in which he has, by the arrangement already explained, divided it into two portions, rendered it particularly necessary to give a good

[2] This is his own expression: "Exeundum deinde est, ut extera Europæ dicantur, *transgressisque Riphæos montes* littus Oceani septemtrionalis . . . legendum." iv. 13, § 94. It is evident, therefore, that these visionary mountains had as definite a place in Pliny's conception of the geography of Europe as the Alps or the Balkan.

[3] See above, p. 372. The exact date and duration of his government is uncertain. But he appears not to have returned to Rome till the reign of Vespasian, about A.D. 73.

No allusion is found in his work to his having any special sources of information on this account.

general outline of the whole. But such an outline is wholly wanting. The whole country had in the time of Pliny been completely brought under the Roman system of administration, and had been divided for administrative and judicial purposes into districts (conventus juridici), each of which had its chief town or capital, to which all the surrounding towns and native tribes were subject. This division has been made by Pliny (in this as in many other cases) the basis of his description, and such a choice was well adapted for a mere statistical enumeration of the names of places, which is in fact for the most part all that he has given us, accompanied with a notice of the municipal condition of those which possessed any peculiar privileges, as colonies, municipalities of Roman citizens, &c. All this affords excellent material for the political statistics of the Roman Empire, and the great number of names that he enumerates is of use to the topographer in modern times, who is often enabled to identify them without any geographical indications from their being still preserved in very little altered form.[4] Nor does he omit to mention briefly, with regard to all the great rivers of the peninsula—the Iberus, Durius, Tagus, Bætis, &c.—both where they take their rise and the nations or cities by which they flow. But no attempt is made to combine these separate notices, or to show the connection and boundaries of the river-systems of Spain; while of its mountain chains, with the exception of the Pyrenees, he has given us no particulars at all. Imperfect as were the notions possessed by Strabo of the physical geography of the Iberian peninsula, they were decidedly superior to those which are furnished us by Pliny, though the latter had far ampler materials for the topographical and detailed description of the

[4] The copious lists given by Pliny of the cities and "populi" of Spain are examined and compared with those furnished by other authors, by M. Heiss (*Description Générale des Monnaies Antiques de l'Espagne*, 4to Paris, 1870), whose work, in conjunction with that of M. Hübner, published in 1869, forming the second volume of the new *Corpus Inscriptionum Latinarum*, and containing the inscriptions found in Spain, has for the first time placed the comparative geography of the Iberian peninsula on a securely established footing.

country. Even these he has presented to us in so crude a form, and so ill-arranged, that it would be difficult, if not impossible, to represent on a map this mass of incoherent and often contradictory details.

One of the few points in which he shows a knowledge of the peninsula in advance of that of Strabo, is in regard to the Pyrenees, which he rightly conceived as having their direction from east to north-west,[5] instead of from south to north, and thus rendering the northern side of the peninsula shorter than the southern or that facing the Mediterranean. He is also the first author who attaches due importance to the projection formed on the west coast by the great headland north of Lisbon, now known as Cabo da Roca, or the Rock of Lisbon; though he has fallen into a strange confusion by supposing this to have been the headland called by Greek writers Artabrum.[6] At the same time he exaggerates the case where he makes it the limit between the two sides of the peninsula, and reduces the Sacred Promontory (Cape St. Vincent), which had occupied so prominent a place with all the earlier geographers, to a merely secondary position.

§ 3. With Gaul his acquaintance is far less complete; with the exception of the province of Gallia Narbonensis facing the

[5] "Ipsa Pyrenæi juga ab exortu æquinoctiali fusa in occasum brumalem, breviores latere septentrionali quam meridiano Hispanias faciunt." iv. 20, § 110.

[6] Mela first mentions this promontory under the name of Magnum (iii. 1, § 7). Pliny says of it: "excurrit deinde in altum vasto cornu promontorium, quod aliqui Artabrum appellavere, alii Magnum, multi Olisiponense, ab oppido, terras, maria, cœlum discriminans" (iv. 21, § 113). No doubt can exist as to the promontory of which he means to speak, from the last name applied to it, as well as from his placing it south of the Durius (Douro). But it seems almost certain that he has erroneously applied to it what Artemidorus said of the Artabran Promontory (Cape Finisterre, the Nerium of Strabo, to which Pliny in common with Mela gives the name of Celticum). The words which follow: "Illo finitur Hispaniæ latus et a circuitu ejus incipit frons: septentrio hinc oceanusque Gallicus, occasus illinc et oceanus Atlanticus," are certainly applicable only to Cape Finisterre. There is evidently some great confusion in the matter, but in the absence of the earlier authorities it is impossible to say with certainty how much is the fault of Pliny and what may be due to the Greek writers. At the same time, with his improved means of information, he ought in any case to have rectified their errors and cleared up the question, which he has not done.

Mediterranean, which is on the whole well described, though as usual wanting in clearness of arrangement. But here both the names of the principal tribes, and of the large towns that had grown up under the long continued Roman rule, were so well known, that it was of little consequence in what order they were mentioned. Yet we miss even here the description of the peculiar characters of the coast and the vast marshes and lagunes formed by the Rhone and other rivers, which constitute so remarkable a physical feature of this portion of Gaul. Of the province generally he tells us that in its productions and culture, as well as the civilization and wealth of its inhabitants, it was become rather a part of Italy than a province.[7]

Of the remainder of Gaul, or the provinces verging on the Ocean, he disposes in a very summary manner. After briefly indicating the division into three provinces, or rather into three nations—the Belgæ, Celtæ, and Aquitani—in which he follows the divisions marked out by Cæsar rather than those of the Roman provinces of his day, though he appears to regard them as identical—he proceeds simply to enumerate the "populi," tribes or districts, included in each division. Of these he furnishes us with a very complete list, including all those mentioned by Cæsar, and a considerable number more, the names of which he probably derived from Agrippa, whose personal administration of Gaul must have given him a thorough acquaintance with the country. But beyond this bare list of names Pliny gives us no information at all. He hardly mentions even any of the towns, some of which had certainly in his time attained to considerable importance; and none of the rivers, except those which in his day, like the

[7] "Agrorum cultu, virorum morumque dignatione, amplitudine opum, nulli provinciarum postferenda, breviterque Italia verius quam provincia" (iii. 4, § 31). He describes this province as bounded on the north, and separated from the other provinces of Gaul by the Mons Cebenna and the Jura. It would thus include the Helvetians; though Pliny himself enumerates that people in Gallia Belgica (iv. 17, § 106), to which they were certainly annexed for administrative purposes.

Sequana and Garumna, formed the boundaries of the provinces, with the single exception of the Loire (Ligeris), which he terms "flumen clarum,"[8] but without giving us any particulars as to its origin or course.[9] Almost the only point of a strictly geographical character which he condescends to notice is the projection of the peninsula of Bretagne, occupied by the Osismii, which he describes as running out into the Ocean, so that its circuit was not less than 625 Roman miles, though the breadth of the neck or isthmus joining it to the mainland was only 125 miles. But even here the manner in which this statement is introduced is such as would be unintelligible, were we not able to compare it with other authorities, and acquainted with the real facts of the case.[1] It is strange also that he appears to apply the name of Armorica, which as we have seen was in use in Cæsar's time as a general appellation for the nations of Bretagne, to the Aquitanians of the south-west.[2]

§ 4. Pliny's account of Italy is unquestionably in some respects one of the most valuable parts of his work, at the same time that it affords a characteristic example of its principal defects. He appears indeed at first to rise to the dignity of his subject, and breaks out into an enthusiastic panegyric upon the natural advantages of the country, which recalls the well-known passage in the Georgics of Virgil.[3] He apologizes at the same time for the imperfect manner in which he is compelled to treat so attractive a theme, and to run over in a cursory way what would be a subject for volumes. But having said this, he lapses at once into a mere enumeration of names, resembling that which he has given us for Gaul and

[8] iv. 18, § 107.

[9] He however mentions the Araris, Isara and Druentia, as tributaries of the Rhone; which he describes in connection with the Roman province, iii. 4, § 33.

[1] iv. 18, § 107. He terms it "peninsulam spectatiorem excurrentem in Oceanum *a fine* Osismiorum."

[2] "Inde ad Pyrenæi montis excursum Aquitanica, Aremorica ante dicta" (iv. 17, § 105). It can scarcely be doubted that he here means the same name with the Armoricans of Cæsar, and that he has erroneously transferred the name to a different part of Gaul.

[3] Plin. *H. N.* iii. 5, §§ 39–42. Compare Virgil, *Georg.* ii. 136–176.

Spain. Here again, as might be expected, he had excellent materials, his description of Italy being based (as he himself tells us) upon the official record of Augustus, when he divided Italy into eleven "regions": an administrative division of which we learn the particulars only from Pliny, though it continued in use for official purposes down to the time of Constantine.[4] There can be no doubt that his lists of the towns or communities included in each region were taken from the same official source, and may therefore be relied on as authentic, except in so far as their names may have been disfigured by copyists. But such a document was of course originally intended as a statistical, not a geographical, survey; and though Pliny has so far departed from it, as to describe the regions in geographical order, beginning with Liguria, and ending with Venetia and Istria, and even in the detailed enumeration of the towns, to follow as far as possible the lines of sea-coast, he has hardly attempted to give anything like a real geographical description, either of the peninsula itself, or of the several portions of it.[5]

§ 5. Even his notice of the great chain of the Apennines—the backbone of the peninsula, which determines its whole configuration, is so brief and summary as to convey scarcely any information,[6] and is very far inferior to the clear and characteristic sketch given by Strabo. With regard to the

[4] See Marquardt's *Handbuch der Römischen Alterthümer*, vol. iii. part 1, pp. 57–64.

[5] He has himself described to us in this instance the course that he has pursued. "Qua in re præfari necessarium est, auctorem nos Divum Augustum secuturos, descriptionemque ab eo factam Italiæ totius in regiones XI sed ordine eo, qui littorum tractu fiet; urbium quidem vicinitates ordinatione utique præpostera servari non posse; itaque interiori in parte digestionem in litteras ejusdem nos secuturos, coloniarum mentione signata quas ille in eo prodidit numero." iii. 5, § 46.

[6] After describing the coast of Liguria from the Varus to the Macra, he adds: "A tergo autem supra dictorum omnium Apenninus mons Italiæ amplissimus, perpetuis jugis ab Alpibus tendens ad Siculum fretum" (iii. 5, § 48). This is literally all that he tells us concerning the position or direction of this celebrated chain.

He does not even fix the point where the Alps ended and the Apennines began, though it would appear incidentally (iii. 19, § 132) that he accepted the received view, adopted also by Strabo, which placed the point of junction at Vada Sabbata (Vado near Savona).

northern provinces of Italy again, he has wholly failed to give us any distinct account of the great valley, or rather plain, of the Po, with its broad extent of alluvial land, and the two mountain chains bounding it on either side like two great lines of rampart—a natural picture which one would have thought no one looking at it with an observant eye could have failed to seize. He has, however, given us a detailed description of the river Padus itself, from its sources in the Mons Vesulus (Monte Viso), which he calls the highest summit of the Alps,[7] to its mouths in the Adriatic, of which he has given us some interesting particulars, not to be found elsewhere.[8] He has also enumerated correctly its principal affluents from both sides: and in another passage has connected those on the Alpine side with the lakes from which they flow.[9] The importance of this great river in a geographical point of view was indeed enhanced in the time of Pliny by its having been adopted by Augustus as the boundary throughout its whole course between the Regions into which Northern Italy was divided: Gallia Transpadana and Venetia on the north, Liguria and Gallia Cispadana on the south.

Of the Tiber in like manner he has given us a copious account, as was naturally to be expected from its special interest to an inhabitant of Rome. But he contents himself on the other hand with a bare mention of the Arno, as flowing by Florence[1]: and notices in an equally cursory manner the Liris (Garigliano) and the Vulturnus. In like manner his

[7] "Padus a gremio Vesuli montis celsissimum in cacumen Alpium elati . . . profluens." The notion that the Monte Viso was the highest summit of the Alps continued to be entertained down to a late period, and is not surprising, on account of the prominent position it assumes, when viewed from the plains of Italy. In like manner the Canigou was long supposed to be the highest summit of the Pyrenees.

[8] iii. 15, § 118.

[9] "Adduam Larius, Ticinum Verbanus, Mincium Benacus, Ollium Sebinus, Lambrum Eupilis." iii. 19, § 131. It appears at first strange that while he mentions the Lago d'Iseo (Sebinus), and even the little Lago di Pasiano (Eupilis), he has omitted the much more important Lake of Lugano, but the reason doubtless is that this lake does not give rise to a separate river, its waters being carried off by a short course into the Lago Maggiore (Verbanus).

[1] "Florentini præfluenti Arno appositi." iii. 5, § 52.

account of Campania, though ushered in with a rhetorical flourish in praise of its fertility, contains in reality no description of the peculiar natural conformation of the province, of the volcanic phenomena with which it had so long been associated, or even of the beautiful gulf which had not yet been disfigured by the eruptions of Vesuvius.[2]

§ 6. Altogether it must be said that although his description of Italy—if this term can be applied at all to the bare catalogue of names which he has furnished us—supplies useful materials to the topographer from the great number of such names that he has brought together, and from the certainty that these are in the main authentic, and correctly assigned to their respective Regions, it would have been difficult to compile one which should throw less light upon the real geography of the peninsula. Nor is it more satisfactory in its relation to historical geography. It was impossible indeed to ignore altogether the changes that had taken place in this respect: the tribes and nations that had passed away, or been replaced by others, and the towns that had figured as important cities in the early ages of Rome, but which had wholly ceased to exist in the time of Pliny. But these changes are indicated so concisely, or so mixed up in a confused mass with others, that they have seldom any real historical value. In the case of Latium itself, where so large a number of these early towns had been absorbed by the increasing greatness of Rome, he gives a list of not less than fifty-three cities (clara oppida), which had ceased to exist, including places like Antemnæ, Cænina, and Corioli, which figure conspicuously in the early Roman history, mixed up with names utterly unknown, and probably derived only from ancient rituals, like that of the Septimontium at Rome.[3]

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[2] "Pulcherrimus sinus," as it is justly termed by Tacitus, "antequam Vesuvius mons ardescens faciem loci verteret." (Tac. *Annal.* iv. 67.)

[3] iii. 5, § 70. "Ita ex antiquo Latio LIII populi interiere sine vestigiis." The last expression is no doubt not intended to imply that there were no *ruins* left, but some of the sites enumerated could hardly have been uninhabited in Pliny's time.

At the same time he accepts without hesitation the assertion of an author named Licinius Mucianus—a contemporary of his own—that there had once been twenty-four other towns on the site then occupied by the Pontine Marshes [4]: as well as the not less astounding conclusion that *because* Theophrastus still described the insulated promontory of Circeii (Monte Circello) as an island, and stated its dimensions, *therefore* the whole of the intervening space by which it was joined to the mainland had been "added to Italy" since the year in which that author wrote [5] (U.C. 440). Uncritical as this conclusion would have been, had Theophrastus really made the statement, it becomes ten times more so when we find, from the passage which is still extant, that Theophrastus said nothing of the kind, but correctly described "the Circeium" as a lofty promontory, *which was said by the inhabitants to have been once an island,* but had become united to the mainland by the alluvial deposits of rivers.[6] This is only one instance out of many of the strange manner in which Pliny misconceived or misinterpreted the authorities he had so diligently collected.

§ 7. His account of the two great islands of Sardinia and Corsica is singularly meagre. After stating with tolerable correctness the length and breadth of Corsica and its distance from the mainland of Etruria, he tells us that it contained eighteen "civitates"—meaning of course tribes or communities, not cities—and two colonies, Mariana and Aleria, the one founded by Marius, the other by Sulla. And this is all! Not a word of its mountain ranges, so conspicuous to any one that had sailed over the Tyrrhenian Sea: or of the vast forests that

[4] "A Circeis palus Pomptina est, quem locum XXIV urbium fuisse Mucianus ter consul prodidit," iii. 5, § 59. Some MSS. have xxxiii. It is difficult to understand what misconception could have given rise to this strange statement, no trace of which is found in any other authority. The fact of Mucianus having been three times consul is curiously introduced, as if it added to his authority upon such a point.

[5] Ibid. § 58, "Theophrastus . . . Circeiorum insulæ mensuram posuit stadia octoginta, in eo volumine quod scripsit Nicodoro Atheniensium magistratu, qui fuit Urbis nostræ CCCCXL anno. Quidquid est ergo terrarum præter decem millia passuum prope ambitus, adnexum insulæ post eum annum accessit Italiæ."

[6] Theophrast. *Hist. Plant.* v. 8, § 3.

rendered it "shaggy and savage," as it was forcibly termed by Theophrastus[7]: or of the wildness of its inhabitants, resulting from these physical peculiarities. Of Sardinia he tells us little more. Though his measurements of its dimensions are much more accurate than those of Strabo, he gives us no general idea of the country, and does not even mention its unhealthiness, for which it was almost proverbial among the Romans in his time.[8]

With Sicily he was of course much better acquainted: and here his detailed enumeration of the towns of the island is the more interesting, because we have the opportunity of comparing it with the lists given by Cicero in his Verrine orations, to which we are indebted for so much interesting information concerning the topography of the island. But as usual he gives us little more, and even his passing allusions to the volcanic phenomena of Ætna and the Æolian Islands, which he could not well ignore altogether, are as meagre as possible. At the same time he enumerates the names of all the smaller islands near the coasts of Italy and Sicily, many of them mere rocks, wholly unworthy of notice. Nor has this list even the merit of accuracy, for in two instances he inserts the same island twice over: one as Planaria, and again as Planasia: the other under the two different names of Osteodes and Ustica, both of which unquestionably refer to the same island.[9]

§ 8. It is unnecessary to follow in detail the particulars that he has left us concerning the other countries of Europe that were in his time subject to the Roman Empire. Those that had been long reduced under the usual form of provincial administration, as was the case with Illyricum and Dalmatia, furnished him with statistical details similar to those of Gaul and Spain;

[7] πᾶσαν τὴν νῆσον δασείαν καὶ ὥσπερ ἠγριωμένην τῇ ὕλῃ. *Hist. Plant.* v. 8, § 2.

[8] Thus Mela terms it "fertilis et soli quam cœli melioris, atque ut fœcunda ita pæne pestilens" (ii. 7, § 123) and Martial uses its name as the very type of a deadly climate ("in medio Tibure Sardinia est," *Epigr.* iv. 60) Tacitus also tells us that a number of persons accused of Egyptian and Jewish superstitions were transported to the island, where if they perished from the climate it would be little loss ("si ob gravitatem cœli interissent, vile damnum," Tac. *Ann.* ii. 85). It was thus looked on as a kind of Cayenne.

[9] See the articles PLANASIA and OSTEODES in Dr. Smith's *Dict. of Geogr.* vol. ii.

and he has grouped together the different tribes of these wild mountain regions, according to their division into "conventus" for administrative purposes. This affords us at least some approach towards a geographical arrangement; but very few of the "populi" thus enumerated can be identified. His geographical knowledge of these provinces, as well as those extending from the Alps to the Danube—Rhætia, Vindelicia, Noricum, and Pannonia—was however decidedly in advance of that possessed by any of the Greek writers: he was well informed concerning the tributaries of the Danube—the Save, the Drave, and the Colapis (Kulpa), which joined the Save at Siscia:[1] and he justly censures the writers who had represented an arm of the Danube as flowing into the Adriatic and giving name to the peninsula of Istria.[2] Mœsia on the contrary, which had been lately incorporated in the Roman Empire, he disposes of in a very summary manner: and with Dacia and the provinces beyond the Danube which had not yet been brought under subjection, his acquaintance was so imperfect that he hardly mentions them at all.[3]

§ 9. There is hardly any portion of his work, which more strongly exemplifies all the defects of Pliny's method, and his utter want of conception of the task he had undertaken as a geographer, than his description of Greece—a country on which, as he himself tells us, he dwells at considerable length, on account of its ancient fame and literary celebrity. Hence he could not have wanted for good materials had he chosen to avail himself of them. But as usual he affords us no real description of the country, either geographical or physical, and presents us with nothing but a confused assemblage of names,

[1] Siscia, still called Siszek, had been converted into a fortress by Augustus, and for some time afterwards continued to be one of the chief cities of Pannonia. It afterwards gradually declined, as Sirmium, lower down the Danube, rose into increasing importance.

[2] iii. 18, § 127. He adds with unusual emphasis: "Nullus enim ex Danuvio amnis in mare Hadriaticum effunditur." The contrary opinion, as we have seen, was still held by Cornelius Nepos and by Mela. See Chapter XXIII. p. 357.

[3] He does not appear to have had any knowledge of the great river Theiss, or of the Carpathian mountains, the name of which appears for the first time in Ptolemy.

rendered even more confused and perplexing by the mixture of those of different ages into one undistinguished mass. We have seen that Strabo impaired the clearness of his geographical account of Hellas by an excess of archæological lore, and by needless discussions on the connection of the Homeric geography with that of his own time. But he took care at least to keep the two distinct, and if he devoted a disproportionate amount of space to such antiquarian disquisitions, he did not omit to give us a clear geographical outline of each province and district of Greece. Pliny gives us no such outline (beyond the trite comparison of the Peloponnese to a plane leaf), while the names which he heaps together in a confused jumble are some of them places that were still peopled and inhabited, some of them derived from the Homeric geography, that had long since disappeared, others merely obsolete or poetical names for the same towns that he enumerated under their later appellations. He had apparently in this instance no official catalogue upon which to rely with regard to the existing state of things, and hence compiled at random from his Greek authorities, with no intelligible criterion or rule of selection.

For the northern coasts of the Ægean he presents us with a tolerable *paraplus*: but his enumeration of the islands in that and the Ionian Sea is again a mere dry nomenclature, interspersed with occasional statements of the distances from one to the other, but unaccompanied with any geographical indications of their position: except in the case of the Cyclades, the arrangement of which in a kind of circle, with Delos as its centre, had come to be regarded as one of the received points of geography.[4] But even here he was unable to adhere to any definite or intelligible order, and has confused his

[4] According to Strabo (x. 5, § 2) the Cyclades were not merely a geographical designation, but represented an union for sacred purposes, who used to send sacrificial deputies (θεωρούς) and choral bands to Delos. There were at first twelve of them, but others were subsequently added. Strabo however rejects the three insignificant islands of Prepesinthus, Oliarus, and Gyarus, which were admitted by Artemidorus, and thus reduces the number to twelve.

enumeration by the introduction of obscure islets out of their place, and the omission of others of more importance where they would naturally be looked for.[5]

§ 10. His accounts of the Euxine and its European shores is tolerably full and circumstantial, but as in other cases is obscured by the confusion arising from his mixing up names and statements derived from Herodotus or writers who followed him, with those of later authors who described a state of things wholly different. Thus we find him reintroducing the Panticapes as one of the rivers of Scythia, which he describes as separating the agricultural Scythians (Georgi) from the nomads—a statement derived from Herodotus and Ephorus:[6] and he adds that some writers represented the Panticapes as a confluent of the Borysthenes below Olbia, while those better informed (diligentiores) called this confluent the Hypanis: "so great was the error (he observes) of those who placed that river (the Hypanis) in Asia."[7] But Strabo had correctly pointed out that there *was* a river Hypanis on the Asiatic side of the Euxine (the modern Kuban) of the same name with that which fell into the Borysthenes.[8] That any doubt should exist in the time of Pliny with regard to the junction of the latter in the immediate neighbourhood of such a flourishing commercial city as Olbiopolis, is utterly impossible, and his confusion of ideas can only be accounted for by the incoherent manner in which he has brought together his multifarious authorities. In like manner he introduces the rivers Hypacyris and Gerrhus, both of which are found in Herodotus,[9] but as Mr. Rawlinson ob-

[5] Thus he names Prepesinthus—a mere islet situated between Oliarus and Siphnus, as if it lay between Seriphus and Cythnus—and jumps from Myconus to Siphnus, returning afterwards to Oliarus, Paros, and Naxos.

[6] See Chapter VI. p. 185.

[7] "Quidam Panticapen confluere infra Olbiam cum Borysthene tradunt, diligentiores Hypanim, tanto errore eorum qui illum in Asiæ parte prodidere." iv. 13, § 83.

[8] Strabo, xi. 2, § 9, p. 494.

[9] Herodot. iv. 55, 56. Not only does Pliny introduce these obscure names, which were certainly unknown in his day, but he mentions the Hypacyris twice over, once under the name of Pacyris, and again under that of Hypacaris, the form that is used by Mela (ii. 1, § 4). Besides these he mentions also two rivers, which he calls the Acesinus and Buges, neither of which can be identified. His "lacus Buges" is apparently the Putrid Sea.

serves "defy identification with any existing stream:" and certainly Pliny had no better means of identifying them. This part of his work indeed (like many others) does not represent the geography of any period in particular, but is a mere compilation mixed up of the past and present, and of names huddled together without anything like a clear conception of their position or geographical arrangement.

This is still more the case with the enumeration of the Scythian tribes of the interior, where we find the names of nations familiar to the Augustan age, such as the Geloni and Agathyrsi, associated with others like the Thyssagetæ and Budini, which were known only from Herodotus, and had been wholly ignored by Strabo and the other Greek geographers. It is still more inexcusable that he not only includes in his list the fabulous Arimaspians, but proceeds to give a full account of the Rhipæan Mountains, and the region where the air was perpetually filled with snow falling in great flakes like feathers. Beyond this lay the land of the Hyperboreans, of whom he gives a similar account to that of Mela, both in all probability derived from the same source.[1] He afterwards (as already mentioned) crosses the Rhipæan mountains to the Northern Ocean,[2] and follows its shores westward towards Spain and Gades. Of the nations in this part of Europe, and of the islands that adjoined its shores he admits his almost entire ignorance, but collects together a few scattered notices from Greek writers of an immensely large island called by Xenophon of Lampsacus Baltia and by Pytheas Basilia;[3] of another called

[1] iv. 12, §§ 88–91. He indeed introduces the account of the Hyperboreans with an expression of doubt (si credimus); but at the end adds that there can be no doubt of their *existence* (nec licet dubitare de gente ea), on account of the *fact*, attested by many authors, of their having sent sacred offerings to Delos.

[2] iv. 13, § 94. See above, p. 388.

[3] "Xenophon Lampsacenus a littore Scytharum tridui navigatione insulam esse immensæ magnitudinis Baltiam tradit, eandem Pytheas Basiliam nominat." iv. 13, § 95. But in another passage (xxxvii. 2, § 35), where he quotes more fully the statement of Pytheas, he says that he called the island Abalus, while *Timæus* gave it the name of Basilia. So little can we depend upon the accuracy of his references.

The name of Baltia, which here appears for the first time, is interesting

Raunonia, where amber was cast up by the waves in spring:[4] and others called Oonæ where the inhabitants lived solely on the eggs of sea-birds and oats, a description which has nothing in it really marvellous, though it evidently appeared so to the Greeks.

§ 11. The northern shores of Germany he tells us were better known: but even here his information was really very vague and imperfect, though we discern some glimmerings of a better knowledge of this part of Europe. He mentions the existence of a great bay to which he gives the name of Codanus Sinus (a name we have already met with in Mela), which was studded with large islands. One of these, called Scandinavia, was of unknown extent, but so large as to be said by its inhabitants to form another quarter of the world.[5] Another, named Eningia, was supposed to be of equal extent. He was acquainted with the Cimbrian Promontory and the manner in which it projected far to the north: but strangely connects this with a range of mountains which he called Sevo, and describes as not inferior to the Rhipæan mountains, and as forming the great bay already referred to.[6] Of course such a range had no real

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as the origin of our modern term Baltic. But the latter, as applied to the great inland northern sea, was unknown to the ancients.

[4] This name is apparently derived from Timæus; but the whole account is very confused. The island intended is in all probability the same as that previously mentioned. All these notices from the earlier Greek writers point to a confusion between two different sets of traditions—both derived from the amber traders to the Baltic; the one referring to the islands immediately adjoining its southern coast, where the amber was really found; the other conveying some vague notion of immense islands to the north, including probably the southern portion of the Scandinavian peninsula.

[5] This is the first mention in any ancient writer of this now familiar name. It appears, indeed, in some editions of Mela, but is a mere arbitrary correction of the editors, substituted for "Codanovia," which is the reading of the best MSS. See Parthey's edition.

[6] "Mons Sevo ibi immensus nec Ripæis jugis minor immanem ad Cimbrorum usque promontorium efficit sinum, qui Codanus vocatur, refertus insulis, quarum clarissima est Scandinavia, incompertæ magnitudinis, portionem tantum ejus, quod notum sit, Hillevionum gente D incolente pagis, quæ alterum orbem terrarum eam appellat: nec minor est opinione Eningia." iv. 13, § 96.

The name of the Hilleviones is otherwise unknown, unless they are to be regarded as identical with the Λευῶνοι of Ptolemy. That of Eningia is also found in no other writer; the conjecture that Finland is meant, is extremely far-fetched and improbable. None of the names thus mentioned can in fact be identified with any approach

existence, but it is curious that its mention by Pliny in this passage is entirely isolated, and nothing corresponding to it is found in any other author, except Solinus, who, as usual, simply copies Pliny.[7]

His account of Germany in general is singularly defective and scanty: especially when we consider that Pliny had himself served in that country, and had written an elaborate history of the wars of the Romans with the Germans. The first nation adjoining Sarmatia along the shores of the Baltic, he tells us, were the Ingævones, under which general appellation he includes the Cimbri, Teutones and Chauci. He must therefore have regarded them as occupying the whole of the north of Germany, from the Vistula to the Weser. But he names also the Vindili, whom he appears to place in the north-east of Germany; the Istævones nearer the Rhine, and the Hermiones in the interior of the country, to whom he assigns the well-known tribes or nations of the Suevi, Hermunduri, Chatti and Cherusci. But he gives us no statement at all of the position or boundaries of these several nations: and merely enumerates by name the great rivers which flow into the Ocean—the Vistula, the Elbe (Albis), the Weser (Visurgis), the Ems (Amisius), the Rhine and the Meuse. With these he associates one obscure name, otherwise unknown, that of the Guttalus, which he apparently places east of the Vistula, and therefore not properly in Germany at all.[8] He notices also

to certainty, or even probability. But Pliny seems certainly to have had a strong impression of the existence of extensive lands (which of course he regarded as islands) in the northern ocean. He elsewhere tells us (ii. 108, § 246), "Nam et a Germania immensas insulas non pridem cognitas compertum habeo." It is strange that he does not seem to suspect their identity with those vaguely mentioned by earlier Greek writers, already referred to. These were described by them as opposite to the coast of Scythia, because all their intercourse with the northern ocean passed from the Euxine through that country, while the Romans, who heard of them through the Germans, placed them opposite to the shores of Germany.

[7] Solin. c. 20, § 1.

[8] This would appear from the order in which he enumerates them (iv. 13, s. 28, § 100): "Amnes clari in Oceanum defluunt Guttalus, Vistillus sive Vistla, Albis," etc. But Solinus, who as usual copies Pliny, says: "de internis ejus (Germaniæ) partibus Alba, Guthalus, Vistla amnes latissimi præcipitant in Oceanum" (Solin. c. 20, § 2). He therefore placed the Guttalus between the Elbe and the Vistula. It seems

the chain of islands extending along the coast of Germany between the mouth of the Rhine and the Cimbrian Promontory,[9] to one of which the name of Glesaria had been given by the Roman soldiers, on account of their having found amber there.[1] The name was by some writers extended to the whole group.

§ 12. Still more meagre and unsatisfactory is his notice of the British Islands. Britain itself, or Albion as he considers it ought more properly to be called, had in his time been in great part subdued, but he contents himself with remarking that "in thirty years the Roman arms had not extended the knowledge of it beyond the Caledonian Forests,"[2] and then gives its length and breadth according to Agrippa, in whose time it was still comparatively unknown. He does not give the name of a single people, town, or river: and as usual has no particulars of its physical geography, natural productions, or the manners of its inhabitants. Of Ireland (Hibernia) he tells us only that it was about the same breadth as Britain, but two hundred miles shorter: and adds that the shortest passage to it, from the land of the Silures, was thirty miles. But while he thus gives us absolutely no particulars as to the large and really important islands, he enumerates a number of small ones which were scattered around them, including the Orcades, the Æmodæ (the Hæmodæ of Mela), the Hæbudes (the original form of the word which has been perverted into the modern Hebrides)[3]

more probable that the name had been misplaced by Pliny, and really referred to the Oder, than that he had no notion of that great river, and yet mentioned the Pregel or any other obscure stream east of the Vistula, with which the Guttalus has been identified by German writers. But it is strange that no definite mention of the Oder is found in any ancient geographer: its identification with the Viadus of Ptolemy being very dubious.

[9] With this important feature of the north coast of Germany he was well acquainted. "Promontorium Cimbrorum excurrens in maria longe peninsulam efficit," iv. 13, § 97.

[1] He states that there were in *all* twenty-three of these islands, which had been made known by the Roman arms: among the most celebrated of these were Burcana (see Chapter XX.) and Glaesaria or Glessaria "a succino militiæ appellata." It is clear that he means to say the island was so called by the soldiers of Germanicus because they found amber there, which as he elsewhere tells us (xxxvii. § 42) was called by the Germans "glæsum" or "glessum" (*i.e.* Glas).

[2] iv. 16, § 102.

[3] The form Hebrides is sanctioned by one or two of the MSS. of Pliny, but the form Hebudes (or Hæbudes), which is

and others which he enumerates by name as existing *between Britain and Ireland*, among which we find (associated with Mona and Monapia, corresponding to Anglesea and the Isle of Man) the name of Vectis, unquestionably the Isle of Wight![4] The most distant of all he tells us was Thule, his notice of which has been already cited: and he then refers to the statement of Timæus (already noticed) concerning an island called Mictis from whence tin was brought.[5] It is strange to find Pliny still referring to an author like Timæus, who wrote more than three centuries before, for an account of the British tin trade, and either unable or else too careless to add any particulars from later authorities. In common with most earlier writers he connected the Cassiterides with Spain,[6] and no mention of this celebrated name is found among the islands adjoining Britain.

SECTION 3.—*Geography of Asia and Africa.*

§ 1. Pliny's geography of Asia and Africa is in some respects more interesting than his account of Europe. It is indeed to a great extent characterized by the same defects,[7] while his materials were on the whole very inferior. But it nevertheless contains considerable additions to our informa-

found in all the best editions of Pliny, and the MSS. of highest authority, is strongly confirmed by Ptolemy, who writes the name Ἔβουδαι (Ptol. ii. 2, § 11).

[4] The name of Monapia first occurs in Pliny, and must be unquestionably identified with the Isle of Man; though the name of the latter would dispose us at first to consider it as representing Mona. But the Mona of the Romans, which was attacked by Suetonius Paulinus and Agricola, was certainly Anglesea. Cæsar, who places it midway between Britain and Ireland (*B. G.* v. 13) probably confounded the two.

[5] See Chapter XV. p. 603.

[6] iv. 22, s. 36, § 119. "Ex adverso Celtiberiæ complures sunt insulæ Cassiterides dictæ Græcis a fertilitate plumbi."

[7] A striking instance of these is found in his description of Mount Taurus (v. 27, §§ 97–99). Here he has evidently taken up the idea of Eratosthenes of extending this name to the whole chain of mountains, or rather succession of chains, which extended across Asia from west to east, from Lycia to the Indian Ocean; but he has so disguised and disfigured this by his rhetorical phrases and far-fetched turns of expression as to be much more calculated to confuse his reader than to assist him in forming a general notion of the physical structure of Asia.

tion. For the provinces bordering on the Mediterranean he had here again the advantages resulting from the Roman administration, and hence he possessed the means of giving a topographical review of the provinces of Northern Africa from Mauretania to Egypt more complete and elaborate than that of any former writer. In regard to Syria and Asia Minor also he had ample means of information: and though in respect to the latter country he wanted the advantage possessed by Strabo of extensive personal acquaintance, and has failed (as usual) to give us any clear general outline of its physical geography, he has, by the number of towns he enumerates, and their arrangement under the different "conventus" or juridical divisions, furnished us with important additions to our topographical knowledge. In this respect his account of Asia Minor is decidedly superior to that of Greece, but it is disfigured to a great extent by the same accumulation of obscure names, either of places that had long since disappeared, or that had never been more than poetical or antiquarian appellations for cities better known under their ordinary names. In like manner his enumeration of the islands that line the eastern coasts of the Ægean is a detailed and minute list, in which he has sought to include every rock or islet that bore a name, without any distinction as to their geographical importance, and generally without any clear indication of their position.[8]

§ 2. His account of Syria is one of the clearest and most satisfactory portions of his work. While that country had been brought wholly under the Roman administration and was enjoying a state of the highest prosperity, the recent wars of Vespasian and Titus in Judæa had attracted the special attention of the Roman world to this quarter, and Pliny doubtless enjoyed the advantage of excellent materials.

[8] It is a marked instance of the carelessness with which these lists are compiled that he not only includes Teos, a well-known city on the mainland, among the *islands;* but specially describes it as such: "Clara vero *in alto* Teos cum oppido" (v. 31, § 138).

Hence we find him not only giving us a correct, as well as minute, description of the coast from the confines of Egypt to the Gulf of Issus, but explaining clearly the peculiar conformation of the two parallel ridges of Lebanon and Anti-Lebanon, with the rise of the Orontes between them:[9] and in like manner giving a full and accurate account of the course of the Jordan, and of the two lakes that it formed, which he calls Gennesara and Asphaltites.[1] But he estimates the length of the latter (the Dead Sea) at 100 Roman miles, and its greatest breadth at 25, both dimensions being just about double the reality. He gives also a very exaggerated description of Mount Casius (Jebel Okra) near the mouth of the Orontes, which he asserts to be so lofty that the rising sun could be seen from its summit *three hours* before it was visible from below.[2] It was doubtless the isolated character of this mountain, rising abruptly from the sea, that gave rise to the notion of its great altitude, while its proximity to the cities of Seleucia and Antioch led to its being frequently ascended.[3] According to Pliny the ascent by the winding course necessarily followed occupied nineteen miles, whilst its *direct* height was only four.[4]

Pliny is also the first author who gives us any special notice of Palmyra, which was in his time a place of considerable importance. From its position between the two empires of the Romans and Parthians it was an object of anxious interest to both in time of war, but had as yet preserved its inde-

[9] v. 20, § 77; 22, § 80.

[1] Ib. 15, 16, §§ 71, 72.

[2] "Super eam mons eodem quo alius nomine, Casius, cujus excelsa altitudo quarta vigilia orientem per tenebras solem aspicit, brevi circumactu corporis diem noctemque pariter ostendens." v. 22, § 80. The same thing is stated by Aristotle of the Caucasus, a range of a very different character (*Meteorolog.* i. 13, § 18).

[3] Among others it was thus ascended by the emperor Hadrian (Spartianus *Vit. Hadriani*, c. 14).

[4] "Ambitus ad cacumen XIX M. P. est, altitudo per directum IV." (*l. c.*) It is probable that he does not mean by this the *perpendicular* height, but the height supposed to be measured in a direct line from the base to the summit. The real elevation of Mount Casius is only 5318 feet, while the highest summit of the neighbouring Lebanon attains to more than 10,000 feet. But we have already seen how vague were the notions of ancient writers concerning the height of mountains in general.

pendence, and carried on an extensive trade in time of peace. He correctly describes it as surrounded on all sides by a broad belt of sandy desert: and places it 176 Roman miles from Damascus, which but little exceeds the truth.[5]

§ 3. His account of the two great rivers, the Euphrates and the Tigris, is the fullest and most detailed that we find in any ancient author. The former river especially, from its having so long formed the boundary between the Roman and Parthian empires, was become familiar to all, while recent wars in Armenia had brought the Romans acquainted with the upper part of its course, near its source. This is placed by Pliny, on the authority of Domitius Corbulo, in a mountain called Aba, in the "præfectura" or district of Caranitis, while Licinius Mucianus, also a contemporary writer, placed it at the foot of a mountain called Capotes, 12 miles above a town named Zimara.[6] The first statement is unquestionably correct: the district of Caranitis being that around the modern Erzeroum (which was still called Karin in the middle ages) and the sources of the northern or main branch of the Euphrates being in fact only about 20 miles N.E. of that city. But Pliny has no indication of the existence of the two great arms, which are correctly regarded by the Armenian writers, as combining to produce the main stream, a view adopted from them by all modern geographers: he still, like Strabo and other Greek writers, considered the northern arm only (which still retains the name of Frat) as the true Euphrates, and regarded the southern arm (the Murad Tchai) as a mere affluent or tributary. It is almost certainly this river which he designates under the name of Arsanias.[7]

In regard to the lower part of its course he had also very

[5] Plin. v. 25, § 88. He says of it, "Palmira urbs nobilis situ, divitiis soli et aquis amœnis, vasto undique ambitu arenis includit agros, ac velut terris exemta a rerum natura, privata sorte inter duo imperia summa Romanorum Parthorumque, et prima in discordia semper utrinque cura." It did not pass under the Roman yoke till the time of Trajan. The earliest inscriptions are of the second century.

[6] v. 24, § 83.

[7] v. 24, § 84; vi. 27, § 128. See Chapter XXII. p. 289.

correct information, stating distinctly that the two rivers, the Euphrates and the Tigris, had formerly had separate mouths, with an interval of 25 miles between them, but that the mouth of the Euphrates had been blocked up in the course of time, and its waters diverted for purposes of irrigation, what remained of them finding their way into the Tigris and thence into the sea.[8] A considerable portion of them also was diverted at a higher point of their course, and carried by a canal into the Tigris beneath the walls of Seleucia. This must have nearly coincided with that still known as the Nahr el Malcha, or royal canal.

The Tigris he describes, in accordance with the received fable, as rising in Armenia, not far from the Euphrates, flowing through two lakes, which he calls Arethusa and Thospitis,[9] and successively passing through two underground channels, until it finally emerges, so near the river Arsanias that their waters became commingled in times of inundation. This tradition would seem to have reference to the branch of the river that has its rise near Bitlis. But the notions of ancient writers concerning the sources of the Tigris are very confused, and those of Pliny are certainly no clearer than the others.[1] In describing the lower course of the river it is remarkable that he does not notice its two important tributaries, the Greater and Lesser Zab, known to the Greek writers as Zabatus or Lycus.

[8] v. 26, § 90; vi. 27, § 130. "Inter duorum amnium ostia XXV M. P. fuere, aut ut alii tradunt VII M. utroque navigabili. Sed longo tempore Euphraten præclusere Orcheni et adcolæ agros rigantes, nec nisi per Tigrim defertur in mare."

The Orcheni were one of the tribes of the Chaldæans, celebrated for their skill in astronomy (Strab. xvi. p. 739; Plin. *l. c.* § 123); probably they were skilled also in engineering, and hence began the process of diverting the waters of the Euphrates for purposes of irrigation.

[9] Of these, there can be no doubt that the lake Thospitis is the same with the Thopitis of Strabo (xi. p. 529), which is certainly the great Lake of Van; but it is impossible to conjecture what is the lake to which he has given the purely Greek name of Arethusa. The story of the passage of the Tigris through these lakes (of course without mixing its waters with them) is doubtless a mere fiction, but the lakes themselves must probably have had a real existence; unless the two names refer to one and the same lake, which is not impossible. Strabo, as we have seen, while telling the same story, *mentions* only *one* lake. (See Chapter XXII. p. 289.)

[1] See Note A, p. 439.

§ 4. With Armenia and the neighbouring provinces Pliny considered himself as better acquainted than any of his predecessors, and boasts of the superior means of information that he derived in regard to them from the campaigns of Domitius Corbulo and other Roman generals.[2] But there is unfortunately little evidence of the supposed superiority displayed in his work. His description of Armenia itself is very concise and summary, and he does not even notice in this place the lakes which form so important a feature in its physical geography, and of the existence of which he was fully aware. But his ideas concerning the nations to the north of it, the Albanians and Iberians, which he describes as extending to the foot of the Caucasus, were tolerably clear and distinct; and even his names for the wild tribes of that mountain range seem to be derived from good authority, as we recognize among them that of the Suani, which still gives name to the valley of Suanetia.[3] He gives a detailed description of the remarkable pass of Dariel, to which he gives the name of the Caucasian Gates (Portæ Caucasiæ), and takes credit to himself for pointing out the error committed by many writers, who confounded them with the Caspian Gates, which bore so important a part in the works of Greek geographers.[4] But if this error was really prevalent in the time of Pliny, it was introduced by the Romans who had been engaged in wars in these countries, for, as we have seen, Strabo was already well acquainted with the pass through the Caucasus, though he did not give to it the name of the Caucasian Gates.[5]

Of the countries beyond the Caucasus towards the north

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[2] vi. 8, § 23. See above, Chapter XXIII. p. 346.

[3] vi. 4, § 14; ii. § 30., In the former passage he correctly describes the river Cobus as flowing from the Caucasus through the Suani into the land of the Colchians. This is clearly the river now known as the Ingur.

It is a striking instance how often close resemblances of name may be merely accidental, when not supported by other evidence, that while the name of Suanetia occurs *in the Caucasus*, that of the Suanetes is found in the list of the *Alpine* tribes given by Pliny from the monument of Augustus (Plin. *H. N.* iii. 20, § 137).

[4] "Ab his sunt Portæ Caucasiæ, magno errore multis Caspiæ dictæ." vi. 11, § 30.

[5] See Chapter XXII. p. 281.

Pliny had evidently nothing but the vaguest idea, and in regard to the Caspian Sea he still adhered to the erroneous notion of its being a mere inlet of the northern ocean, as the Persian Gulf was from the south, though communicating with it only by a long and narrow strait.[6] In regard to its dimensions and extent he follows the authority of Eratosthenes and Artemidorus, adding, however, a statement from Agrippa, which is not very intelligible. But his description of this sea, and still more of the nations to the east of it, is very superficial and confused, and he certainly appears to have had no clear ideas on the subject. All this part of his work is immeasurably inferior to the description of the same countries given by Strabo: even the great river Oxus obtains only a passing notice, with no indication of its importance or general course, and the additional statement that it took its rise in a lake also called Oxus was probably a mere conjecture.[7] On the other hand we are indebted to him for the interesting notice which he has preserved to us from Varro, of the course taken in the time of Pompey by the overland trade from India to the Caspian. The merchandise conveyed by this route passed in seven days from India (Cabul?) into Bactria, to the river Icarus, which flowed into the Oxus, and was carried down that river into the Caspian, from whence it passed up the Cyrus, and thence by overland transport of only five days into the Phasis, and so into the Euxine.[8] But of the overland trade from

[6] "Irrumpit autem arctis faucibus et in longitudinem spatiosis," vi. 13, § 38. His knowledge on this subject was therefore not in advance of that of Mela.

[7] It is true that the Oxus actually does take its rise in the lake called Sir-i-Kol, on the central plateau of the Pamir (Wood's *Journey to the Source of the Oxus*, p. 232), but it is most unlikely that Pliny should have any real information concerning this secluded little mountain lake, while his knowledge on all other points was so very meagre. It was a common practice with ancient geographers to *assume* the existence of a lake as the source of a river, of which they had no real knowledge.

With regard to the Iaxartes he refers to a certain Demodamas, as his principal authority for these regions ("transcendit eum amnem Demodamas, Seleuci et Antiochi regum dux, quem maxime sequimur in iis," vi. 16, § 49), but nothing further is known of such an author.

[8] vi. 17, § 52. The river Icarus is otherwise unknown, and the name probably corrupt. But the river meant must be one of the streams which flow northwards from the Hindoo-Koosh through Badakshan, perhaps the Surkhund, or river of Koondooz.

Bactria to China, which had attained such an important character in the time of Ptolemy, and even in that of Marinus of Tyre, no trace is found in Pliny.

The only exception to the imperfect and perfunctory character of his account of this part of Asia is in regard to the little isolated district of Margiana (Merv), of which he gives a somewhat full and characteristic description, extolling its fertility and especially its abundance of vines, which is also noted by Strabo. It had attracted attention among the Romans from its being the place to which the Parthian king Orodes had transported the Roman captives taken after the defeat of Crassus.[9]

§ 5. Of the extensive provinces, which were comprised within the Parthian Empire, as they had formerly been in that of the Persians, including the whole of the vast table-land of Iran and the adjoining regions, Pliny appears to have had no knowledge beyond what he derived from the Greek writers whom we have already considered. This is the more remarkable, as he certainly appears to have made great use of the work of Isidorus of Charax, who from the situation of his birthplace, was likely to have had good means of information, while he is said to have written a work expressly devoted to the geography of Parthia.[1] We are indebted to Pliny indeed for the statement that Parthia included eighteen subordinate "kingdoms"—a title which they seem to have employed as equivalent to what the Persians had termed satrapies;[2] but unfortunately he does not enumerate them, contenting himself with stating that eleven of them were called the "upper" provinces, occupying the northern portion of the empire, and seven the "lower."[3]

Of the original home of the Parthians—the district of Par-

[9] Plin. vi. 16, § 47.

[1] See Chapter XX. p. 163. The unusually circumstantial account given by Pliny of the position and history of Charax (vi. 27, §§ 128–130), a city which is not mentioned by any earlier writer, must undoubtedly have been derived from the same authority. It appears to have been in his time an important place of trade.

[2] Hence was doubtless derived the proud title assumed by the Parthian monarchs on their coins of "King of Kings" (*βασιλεὺς βασιλέων*). The real designation of these viceroys appears to have been Vitaxæ or Bistaxæ, a native term which is preserved to us by Ammianus Marcellinus (xxiii. 6, § 14) and Hesychius (v. *Βίσταξ*).

[3] vi. 25, § 112.

thia Proper—he has given a brief, but very correct, account;[4] describing it as situated at the foot of the great mountain chain which borders all these provinces on the north, and was regarded by the ancients as a continuation of the Taurus, connecting that range with the Paropamisus or Hindoo Koosh to the east. It was bounded on the east by the Arians, on the south by Carmania and the Ariani (?), on the west by the Medes, called Pratitæ, and on the north by the Hyrcanians; but he adds that it was surrounded on all sides by deserts, which is an exaggeration, though on the north and south it certainly adjoined the great deserts, of Kharesm on the one hand, and that of Central Iran on the other.

§ 6. Of the other provinces of Upper Asia in general Pliny's account is very meagre and unsatisfactory, and cannot be said to add anything to our knowledge. Even of such well-known countries as Persia (Proper) and Media, his notices are at once brief and confused: while his statement that Ecbatana—the celebrated capital of Media—was *founded* by king Seleucus,[5] is a strong instance how little reliance can be placed upon such notices in his work, and how cautious we should be in adopting them where we have not the means of correcting them from other sources. Such is also the case with his assertion in another place, that Susa was founded by Darius the son of Hystaspes; a statement which may probably be correct with regard to the royal palace there, but, as we learn from recent researches, the city itself is of much greater antiquity.[6]

His enumeration of the Scythian tribes to the north of the Parthian Empire is, as usual, a mere collection of names of the most miscellaneous description, derived from a variety of sources, and strung together without discrimination, or any

[4] Ibid. § 113.

[5] "Ecbatana caput Mediæ Seleucus rex condidit," vi. 14, § 43. His statement in another passage (ib. 26, § 116) that it was a city of the Magi, which was transferred by Darius to the mountains (Horum [Magorum] Ecbatana oppidum translatum ab Dario rege ad montes), would *seem* to refer to some other place of the name connected with Persia proper; but the whole passage is so confused that no reliance can be safely placed on it.

[6] See Loftus's *Chaldæa and Susiana*, ch. 26.

attempt at geographical arrangement. With regard to the unknown eastern shores of Asia, his account almost precisely agrees with that of Mela, and is evidently derived from the same source.[7] But in respect to the Seres, whom he places, in common with the earlier geographer, on the Eastern Ocean, between a promontory called Tabis[8] and the confines of India, he furnishes us with some further particulars, and not only notices their production of silk, which he describes, like Virgil, as *combed* off the leaves of trees,[9] but he mentions several rivers and other geographical names in connection with their country, which show a certain dawning of a better acquaintance with it.[1] He places also in this part of Asia a people called the Attacori, whom he describes as resembling the Hyperboreans in the excellence of their climate, and having been made the subject of a special treatise by a Greek writer named Amometus, similar to that of Hecatæus concerning the Hyperboreans. Both races were evidently equally fabulous.[2]

§ 7. Pliny now proceeds to the description of India, a country which, as we have seen, had within his own time been

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[7] vi. 17, § 53.

[8] This promontory, mentioned by Mela also under the same name, is almost certainly the same with the Tamarus of Eratosthenes and Strabo, the supposed eastern termination of the chain of Taurus, which had no real existence.

[9] "Seres lanicio silvarum nobiles, perfusam aqua depectentes frondium canitiem, unde geminus feminis nostris labor, redordiendi fila rursusque texendi." vi. 17, § 54. From this passage it appears that notwithstanding his pretensions as a naturalist he was not at all in advance of Virgil as to the nature of silk and the manner of obtaining it. See the passage already quoted in Chapter XX. p. 166 (*Georg.* ii. 121). It appears that the Romans in the time of Pliny only valued silk textures of a very thin gauze-like character; and hence when they received them from China took the trouble of unravelling them and weaving them again into a kind of gauze. That this is the sense of the words above cited (which indeed can scarcely admit of any other) is fully proved by those that follow: "Tam multiplici opere, tam longinquo orbe petitur, ut in publico matrona transluceat." The "Sericæ vestes" were evidently regarded by them as a kind of improvement on the Coan textures, of which Horace makes almost exactly the same remark (*Satir.* i. 2, s. 101. See also Seneca, *de Benefic.* 7, § 9).

In another passage (xxxiv. 14, § 145) he speaks of the Seres as sending furs and iron, in addition to their silk dresses. The latter he considers as superior to all other iron in quality.

[1] None of these names is otherwise mentioned or can be identified. Indeed in the total misconception of the geography of all this part of Asia which prevailed in the time of Pliny, the attempt to do so would be absurd.

[2] vi. 17, § 55.

very much opened out by the extension of the Roman commerce, and concerning which he really possessed important additional information. No other part of his work indeed displays so much advance upon the knowledge of his predecessors. Yet even here he begins with a statement of its geographical position and dimensions which he derives from Eratosthenes,[3] and his account of the northern portions of India, and the interior from the Indus to the Ganges, is taken wholly from writers of the time of Alexander or that of his successors. His detailed statement of the distances from the Indus to the mouth of the Ganges has been already examined;[4] and with all its imperfections is a valuable contribution to our knowledge, but it dates also from the same period.

With regard to the Ganges itself, it is remarkable that his information is in some respects far less precise and definite than that of Strabo, as that writer was well acquainted with its sources in the Emodi Montes, while Pliny tells us that some regarded its sources as unknown, like those of the Nile: others said that it took its rise in the Scythian mountains—an extremely vague designation. He quotes also another account of its source, as breaking out at once in a violent cascade with a loud noise, and gradually lapsing down into a gentle and placid stream, but without any indication of the geographical site to which this was referred.[5] He adds, that it received as tributaries nineteen other rivers, among which he notices as navigable the Iomanes, the Prinas, the Caïnas, the Condochates, Erannoboas, the Cosoagus, and the Sonus. Here we meet with another instance of the confusion so common in Pliny, the Erannoboas and the Sonus being, as we have already seen, only two names for the same river.[6]

Contrary to his usual practice, Pliny gives various particulars

[3] *H. N.* vi. 17, § 57. With this statement Pliny compares that given by Agrippa, who undoubtedly had no additional means of information.

[4] See Chapter XIV. p. 557.

[5] vi. 18, § 65.

[6] See Chapter XIV. p. 559, note. It may be observed that Pliny himself, a little further on (§ 69), speaks of the Iomanes (Jumna) as flowing into the Ganges "per Palibothros," but this refers to the name of the people—the same who were more commonly called Prasians—not to the city.

concerning the different nations of Northern India, their habits and customs, and the forces that their kings could severally bring into the field, especially the number of their elephants. Those upon whom he especially dilates are the Calingæ, who were the nation nearest to the mouth of the Ganges,[7] and apparently held the coast from thence as far as a city named Dandaguda, situated, as he tells us, 625 Roman miles from the mouth of that river. They appear to have occupied Bengal and Orissa, where a trace of the name still survives in Calingapatam. But he still speaks of the Prasians, whose capital was Palibothra, as the most powerful people of India.[8]

His account of the Indus and its tributaries is far less clear and satisfactory than those of the Greek geographers, and he substitutes for the Hydraotes a river called Çantaba or Cantabra, a name otherwise totally unknown. The Indus itself he describes as flowing for 1250 miles,[9] and receiving nineteen tributaries, though its waters did not extend beyond the modest limits of 50 stadia in breadth. Among the mountain tribes of the interior, of whose names he gives a long list, accompanied with some particulars, but for the most part very confused and uncertain, we may notice the Dardæ, whose territory (he tells us) produced the greatest abundance of gold:[1] these are evidently the same with the Derdæ of Megasthenes, in whose country the author placed the famous gold-digging ants: a fable elsewhere related by Pliny in a circumstantial manner, but without naming his authority.[2]

His idea of the general conformation of India, so far as it is possible to gather it from his expressions, did not differ

[7] vi. 18, § 65.

[8] Ibid. § 68.

[9] vi. 20, § 72. This is a moderate estimate, and was the lowest given by the authors he consulted (parcissimis auctoribus). Yet he himself elsewhere describes Alexander as occupying more than *five months* in his descending voyage, though he never advanced *less* than 600 stadia in a day! (vi. 17, § 60). See Chapter XII. note K k, p. 508. This is a striking instance of the careless manner in which Pliny repeats two entirely contradictory statements without appearing to notice the discrepancy.

[1] "Fertilissimi sunt auri Dardæ," vi. 19, § 67. It has been already pointed out that the name is retained to this day by the Dards on the frontiers of Tibet.

[2] Plin. xi. 31, § 111. See Chapter XIV. p. 566.

materially from that of Eratosthenes and Strabo. He supposed the east coast to follow a direct line from north to south, from the point where Mount Imaus—as he terms the eastern extremity of the great mountain chain that bounded India on the north[3]—abutted on the ocean, to the angle of the continent, where it turned abruptly westward, so as to face the southern, or, as he terms it, the Indian Ocean. But it is singular that we do not find him attempting to apply to the general idea thus formed any of the later information that he had derived from the recent commercial voyages to India, which he describes separately, and without attempting to connect the particular details thence derived with the general geography of the peninsula. Still the account which he gives us of the trade with India as practised in his days, the course pursued, and the ports frequented, is in itself very important and interesting, and will be found to agree well with the much fuller information furnished us at a period very little later by the Periplus of the Erythræan Sea.

§ 8. After giving a pretty full, but very confused and unsatisfactory, report of the voyage of Onesicritus from India to the Persian Gulf, a narrative that has been already examined,[4] he proceeds to relate the navigation to India, "as it had been recently discovered, and was practised in his day."[5] "Such (he says) was the voyage of the fleet of Alexander. Afterwards it was found the safest course to proceed direct from the promontory of Syagrus in Arabia (Cape Fartak) to Patale, with the west wind (Favonius), which they call there the Hippalus,[6] a distance reckoned at 1435

[3] He himself tells us that Imaus, Emodus, Paropamisus and Caucasus were only parts of one continuous chain (vi. 17, § 60); and adds in another passage (§ 64) "a montibus Emodis, quorum promontorium Imaus vocatur, incolarum lingua *nivosum* significante." This etymology is correct, the name Imaus being undoubtedly connected with the Sanscrit "himavat," which means "snowy."

[4] See Chapter XIII. Note A, p. 542.

[5] "Eam navigationem, quæ his annis comperta servatur hodie." vi. 23, § 96.

[6] No explanation of this name is given by Pliny. It is to the Periplus that we owe the important information that it was given in memory of the adventurous navigator, who first discovered the possibility of taking advan-

miles. In the next generation it was judged to be both a safer and nearer course to proceed from the same promontory direct to Sigerus, a port of India. And this mode of navigation was pursued for a long time, until merchants discovered a shorter route, and the profits of India were thus brought nearer to hand. The voyage is now made every year, with cohorts of archers on board the ships: on account of the pirates who infest these seas. It will be worth while (he adds) to set forth their whole course from Egypt: accurate information concerning it being now for the first time available. The subject is one worthy of attention, there being no year in which India does not drain our empire of at least 55,000,000 of sesterces, sending us in return wares which are sold for a hundred times their original value."[7] He then gives in very unnecessary detail the route from Alexandria up the Nile to Coptos, and thence overland to Berenice, a journey which, as he tells us, occupied twelve days, though the distance was only 257 (Roman) miles: and he then proceeds as follows:[8]

"They begin the navigation in the middle of summer, before the rising of the dog-star, or immediately after its appearance, and arrive in about thirty days at Ocelis in Arabia, or Cane in the frankincense-bearing region. There is also a third port which is called Muza, which is not frequented by those sailing to India, but by the merchants who trade in frankincense and other Arabian perfumes. In the interior is a city, the capital of the kingdom, named Sapphar, and another called Save. But for those whose course is directed to India it is most advantageous to start from Ocelis. From thence they sail with the wind called Hippalus in forty days to the first commercial station (emporium) of India, named Muziris, which is not much

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tage of the regularity of the monsoon to hold a direct course to India.

Pliny is moreover inaccurate in identifying it with the Favonius, which with him certainly means the *west* wind (see ii. 47, § 119), while the monsoon, as is well known, blows steadily from the *south-west*. But such a misconception was natural, as the course actually pursued by the navigators would be almost precisely from west to east.

[7] vi. 23, § 101.

[8] Ibid. §§ 104-106.

to be recommended, on account of the neighbouring pirates, who occupy a place called Nitrias: nor does it furnish any abundance of merchandise. Moreover the station of shipping is far from the land, and cargoes have to be loaded and unloaded in barges. The ruler of the country at the time of which I speak was a king named Cœlobothras. There is another more advantageous port, which is named Barace, in the territory of a nation called the Neacyndi. The king of that country was named Pandion, who resided far from the port in a city of the interior, which is called Modura. But the region from which pepper is brought to Barace, in barges hewn out of single trees, is called Cottonara. None of these names of nations, or ports, or cities, are found in any former writer, from which it is evident what changes take place in the state of things in these countries. They commence the return voyage from India at the beginning of the Egyptian month of Tybis, which answers to our December, or at all events within the sixth day of the Egyptian month Mechir, that is within our Ides of January. Thus it comes to pass that they return home within the year. They make the return voyage from India with the south-east wind (Vulturnus), and when they have entered the Red Sea, with the south-west or south wind."[9]

§ 9. It is evident that we have here a statement derived from authentic and recent information: and its accuracy is fully confirmed by the Periplus of the Erythræan Sea, with which we have fortunately the means of comparing it. All the names mentioned by Pliny, and which as he observes were not found in any earlier writer, re-appear in the Periplus, either the same or under such slightly altered forms that they can safely be recognized: and we thus obtain a valuable assistance towards finding their geographical position, in regard to which Pliny's statements in themselves afford us almost no clue. Thus Muziris, the point of most importance, as being the first port in India at which ships arrived after crossing the

[9] Plin. *H. N.* vi. 23, §§ 104–106.

ocean direct from Arabia, may be probably identified with Mangalore: the port of Barace or Bacare (as the name is written in the Periplus and in some MSS. of Pliny), may be placed at the mouth of the inlet that runs up to Melisseram, the Nelkynda of the Periplus, which is evidently the same place that appears in Pliny under the slightly altered form of Neacyndi. The Sigerus of Pliny may in like manner be in all probability identified with the place called in the Periplus Melizigara, and by Ptolemy Melezigyris, which is probably the same as the modern Viziagur, about 120 miles south of Bombay.[1] Thus the part of India visited by the Alexandrian traders can be clearly determined, and the successive steps in the progress of the discovery are probably correctly given by Pliny. But it is very singular that while indicating the farthest points with which this direct trade was carried on, Pliny has omitted all notice of the intermediate ports, between Pattala and Sigerus, and does not even mention the name of Barygaza, which, as we learn from the nearly contemporary Periplus, was one of the most important emporia of trade in India, and was frequented by numerous ships sailing direct thither from Egypt.[2] Nor does he afford any indication, and he had doubtless in reality no idea of the peculiar conformation of this part of the coast of India, the two deep bays by which it is indented (the Gulf of Cutch and the Gulf of Cambay), with the intervening peninsula of Gujerat. He was almost certainly equally ignorant of the important fact noticed by the author of the Periplus, that the coast from Barygaza trended from north to south, instead of preserving a general direction from west to east, as supposed by Eratosthenes and Strabo. The latter view, as we have seen, was adopted by Pliny himself. He appears also to have had no acquaintance with the remarkable fact that the countries at the mouth of the Indus were at

[1] The identifications here suggested are those adopted by Dr. Vincent, and by the most recent editor of the Periplus (C. Müller in his *Geographi Græci Minores*, tom. i. pp. 294–300). The new series of positions proposed for these ports by Colonel Yule will be considered in the next chapter.

[2] *Peripl. Maris Erythræi*, § 49.

this time occupied by Scythian tribes, or at least subject to Scythian rulers—a circumstance repeatedly noticed by the author of the Periplus.[3]

The fact appears to be that Pliny, in this case as in several others, had got hold of a single account of a voyage to India, following the latest discovered route, and that he has incorporated this in his work, without comparing it with any other. The document of which he has thus made use would seem to have been less clear and full than the Periplus which has been so fortunately preserved to us, and must have omitted altogether some of the most important and interesting portions of what we find described in the extant treatise. The coincidences between them are not more than must naturally arise between two accounts nearly contemporary, and both based upon good materials. And there is certainly no ground for the assumption of several modern writers, that the account given by Pliny is *based* upon our existing Periplus, and that the latter document must therefore be referred to an earlier period.

§ 10. Another quarter, in which Pliny considered that he had obtained information far in advance of all preceding writers, was in regard to the celebrated island of Taprobane, which, as we have seen, had been a subject of curiosity and wonder among the Greeks ever since the days of Alexander. An accidental circumstance had recently afforded the means of additional and more authentic information concerning this little known country. In the reign of the Emperor Claudius, a freedman of one Annius Plocamus, who had farmed the revenues of the Erythræan Sea, being on a voyage around Arabia, was carried away by the north winds in the neighbourhood of Carmania, and driven to a port in the island of Ceylon, called Hippuri, where he found refuge on the fifteenth day.[4]

[3] Ibid. §§ 38, 41. On this account the whole of this region is designated by Ptolemy by the name of Indo-Scythia.

[4] "Aquilonibus raptus præter Carmaniam XV die Hippuros portum ejus invectus." vi. 22, § 84. From the manner in which this statement is reported by Pliny we are left wholly in the dark as to the point from which the fifteen days' voyage was reckoned.

He was hospitably received by the king of the country, who was induced, after entertaining him for six months, to send four envoys to accompany him to Rome. It was from these native ambassadors that Pliny professes to have gathered the information that he has furnished to us, according to which the inhabitants of the island enjoyed a state of Utopian felicity, under an admirably ordered government, and leading so healthy a life that it was no uncommon thing for them to attain the age of an hundred years. They were not however without a taste for luxury: and gold and silver, as well as pearls and precious stones, all which they possessed in abundance, were valued and sought after among them as in Europe.[5]

With due allowance for the favourable exaggeration so common in regard to remote and imperfectly known regions, these accounts seem to represent the fact, attested by native records, that Ceylon was at this period a flourishing and comparatively civilized country. But it is singular that all the positive geographical statements which Pliny has transmitted to us, on what would appear to be such good authority, are either erroneous or unintelligible. Thus he tells us[6] that the side of the island which faced towards India from the south-west was 10,000 stadia (1,000 G. miles) in length—an enormous exaggeration, exceeding even the previous estimates of Eratosthenes and Onesicritus:[7] and he adds that the nearest point of India was a promontory which was called Coliacum, at the distance of four days' voyage, in the middle of which another island was met with, called the Island of the Sun.[8] Taprobane itself was said to contain five hundred towns, of which the capital, named Palæsimundus, contained a population of not less than 200,000 inhabitants. It was situated on

[5] vi. 22, §§ 89, 91.

[6] Ibid. § 87.

[7] He had himself previously quoted (§ 81) the statement of Eratosthenes that the island was 7000 stadia in length and 5000 in breadth.

[8] Ceylon is really less than 210 G. miles in length from N. to S., and 120 in breadth, while the strait which separates it from the mainland is not more than 60 G. miles across. But the distance from Cape Comorin—which was clearly the promontory here referred to, and from which Ceylon was supposed to lie due south—is 135 miles.

the south side of the island, with a port on the sea: the only other place mentioned by name is the port at which the Roman navigator arrived, called Hippuri or Hippuros, which has been identified with a port called Kudremale, the name of which has the same meaning (horse-tails) in Sanscrit. In the interior (he tells us) was a vast lake, 375 miles in circumference (!) and containing various islands: from this lake burst forth two rivers, the one flowing south, and called Palæsimundus, from the city of that name near its outflow; the other called Cydara flowing to the north towards India.[9] There is in fact no such lake in Ceylon, nor anything even deserving the name of a lake: nor does any of the more considerable rivers of the island hold its course to the south. The statement probably referred to some artificial lake, formed for purposes of irrigation,[1] but in any case its dimensions must be enormously exaggerated.

There is a curious notice introduced by Pliny in this passage[2] concerning the trade carried on by the inhabitants of Taprobane with the Seres, beyond the Emodian mountains. One of the envoys, named Rachias, asserted that his father had himself visited those countries, and held commercial intercourse with the inhabitants, which was carried on upon the silent system without the use of interpreters. But as he described the Seres themselves as men of gigantic stature, with red hair and blue eyes, it is impossible to believe that he had any acquaintance with the true Chinese.

§ 11. Pliny's description of Arabia would appear at the first glance to be greatly in advance of any preceding account of that country, from the number of names of tribes and towns with which he furnishes us, as well as the detailed enumeration of headlands, islands, &c., along the coast. This part of his work is based, as he himself tells us, principally on the work of Juba, already noticed,[3] which had been prepared by him for

[9] Ibid. § 86.
[1] See Sir E. Tennent's Ceylon, vol. i. p. 557.
[2] Ibid. § 88.
[3] See Chapter XX. p. 176.

the use of C. Cæsar the grandson of Augustus, when he was preparing for an expedition into that country. What were the materials at the command of Juba we have no means of estimating: but there is little doubt that had his original work been preserved to us, we should have derived from it much valuable information. But in the abstract that we find of it in Pliny, it has been as usual abridged and pared down till it presents us with nothing but a bare list of names, for the most part without any attempt at geographical order or sequence, and even this list is as remarkable for its omissions, as for its contents. While we find a long catalogue of names either totally obscure or unknown, or of which we are only able to conjecture the site from their reappearance in the work of Ptolemy, we remark on the other hand that names well known before the days of Pliny, and—stranger still—names well known to Pliny himself, and mentioned by him in other passages, are wholly unnoticed in their proper geographical places. Thus the important promontory of Syagrus (Cape Fartak) so well known as the customary point of departure for India, is not mentioned in the *periplus* he has given of the coasts of Arabia. Nor does he take any notice of Cane, which he has himself mentioned in reference to the trade with India, as the principal port of the frankincense-bearing country. In the same passage, as we have seen,[4] he speaks of Muza as an important emporium of trade within the straits, and of the towns of Sapphar and Save in the interior, in connexion with it. All these notices are fully confirmed by the Periplus and were obviously based upon good information. But no mention is found of any of the three names in his geographical description of this part of Arabia. Nor does he notice the port of Aden, which as we learn from the Periplus was at this time one of the principal places of trade on the outer coast of Arabia.[5]

Even the celebrated promontory forming the northern projection of Arabia at the entrance of the Persian Gulf, and

[4] Above, p. 418.

[5] *Periplus Maris Erythræi*, § 26.

conspicuous from its proximity to the opposite coast of Carmania (the Maceta of Nearchus and Macæ of Strabo), is removed from its proper place in his apparently elaborate description of the Arabian coast, and is disguised under the name of "the promontory of the Naumachæans;"[6] just as he incidentally introduces the name of Cape Syagrus, in stating the distance from it of the Island of Dioscorides (Socotora), of which he is the first to furnish us with any definite information.[7] But no notice of either of these important landmarks in the geography of Arabia is found in its proper place.

§ 12. He commences his *periplus* of the Arabian coast, proceeding from Charax and the mouth of the Tigris, along the southern shores of the Persian Gulf, with the expression that "this coast had first been explored by Epiphanes."[8] If these words refer, as is most probable, to Antiochus Epiphanes, they are glaringly false, so far as refers to the coasts of Arabia within the Persian Gulf—this part of the coast-line having been explored by Greek navigators sent out for that purpose before the death of Alexander[9]—but it is possible that a special voyage for the examination of the coasts of the peninsula may have been sent out by the Syrian king, of which we have no other notice, and that the details furnished us by Pliny may have been derived from this source. But from whatever quarter they were originally drawn, there can be no doubt as to the extremely confused and unintelligible form in which they are transmitted to us.

His enumeration of the various tribes of the interior seems to be founded on better materials, and while it is deficient (as usual) in the necessary geographical data for determining their relative position, we find, besides the names already familiar to

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[6] "Naumachæorum promontorium contra Carmaniam est. Distat quinquaginta M. P." vi. 28, § 152.

[7] Plin. vi. 28, § 153. He gives the distance at 280 Roman (224 G.) miles, a very close approximation to the truth; and calls it "clara;" so that its name must have been well known in his time, though not found in any earlier author now extant.

[8] "Nunc a Charace dicemus oram Epiphani primum exquisitam." Ib. § 147.

[9] See Chapter XII. p. 461.

us from Eratosthenes and Strabo, such as the Minæans, Sabæans, Chatramotitæ, Homeritæ, &c., several others which we either find confirmed by Ptolemy, or are able to identify upon other grounds.[1] He alludes, as we have already seen, to the Arabian expedition of Ælius Gallus, more fully related by Strabo, but in a manner that throws no additional light upon its geography.[2] His report however of the general result of this expedition and the information brought back by the commander, is not without interest. "The wandering tribes (the Bedouins) subsisted only on milk and the flesh of wild animals: the others procured wine, like the Indians, from palm-trees, and oil from sesame. The most numerous tribes were the Homeritæ and the Minæans: their territory was fertile in palm-trees and shrubs, but their flocks were the principal source of their riches. The Cerbani and Agræans were distinguished in war, but most of all the Chatramotitæ: the Carrei had the most spacious and fertile arable lands: the Sabæans were the richest in their forests of odoriferous trees, their mines of gold, their well-irrigated lands, and the abundance of wax and honey."[3] Pliny adds, as a general remark, that the nations of Arabia were extremely rich, from their attracting the wealth both of the Roman and Parthian empires in exchange for their native commodities, while they themselves purchased nothing in return.[4]

It is remarkable that he, in common with most other ancient writers, applied the name of Arabia Felix—restricted in modern usage to Yemen—in a sense that would seem to comprehend almost the whole peninsula: while he employed that of Arabia Deserta only for the sandy desert region

[1] Among these is the name, so familiar in later days, of the Saraceni, which here occurs for the first time.

[2] vi. 28, §§ 160, 161. See Chapter XX. note F, p. 205.

[3] Ibid. § 161.

[4] Ibid. § 162. "In universum gentes ditissimæ, ut apud quas maximæ opes Romanorum Parthorumque subsistant, vendentibus quæ e mari aut silvis capiunt, nihil invicem redimentibus."

The latter statement is obviously a fallacy; we learn from the Periplus that the Arabians imported many articles of Alexandrian and European produce (*Periplus Maris Erythræi*, §§ 24, 28), including corn, wine, tin, coral, &c.

extending from the head of the Gulf of Suez to the Persian Gulf, and forming in a certain sense the isthmus connecting the rest of Arabia with the main continent of Asia. With these vast deserts in the north of Arabia geographers were necessarily acquainted, from their being traversed by caravans on their way from Petra to Charax on the Euphrates, and to Gerrha on the Persian Gulf, both of which were still in the days of Pliny important emporia of trade.[5] But with the great tableland of the interior—still so imperfectly known to us, even at the present day—the Romans appear to have been wholly unacquainted. Their knowledge may indeed be considered as practically limited to the coast districts of Hedjaz, Yemen, and Hadramaut. But even as applied to these comparatively favoured regions, their notions of the richness and fertility of Arabia were strangely exaggerated.

§ 13. With regard to the geographical position, the form and dimensions of the great Arabian peninsula, Pliny's ideas were apparently very imperfect, but they are so obscurely indicated as to leave us in great doubt what they really were. In one passage he describes it correctly enough as extending between the two seas, the Red Sea and the Persian Gulf, in the same manner as Italy was placed between the Adriatic and Tyrrhenian Seas; and as having the same general direction with that country. But by a strange oversight he adds that it resembled it also in size.[6] Yet he himself elsewhere estimates its circuit from Charax round to the head of the Ælanitic Gulf (the Gulf of Akabah) at 4666 Roman miles, which is a tolerably correct approximation, though Juba had reduced it to less than 4000 miles. He gives us no estimate of its length or breadth, but says that its broadest part was between Heroöpolis (at the head of the Gulf of Suez) and Charax, near the mouth

[5] vi. 28. §§ 144, 147.

[6] Ibid. § 143. "Ipsa vero peninsula Arabia inter duo maria, Rubrum Persicumque procurrens, quodam naturæ artificio ad similitudinem *atque magnitudinem* Italiæ circumfusa, in eandem etiam cæli partem nulla differentia spectat."

It may be convenient to the reader to remind him that Arabia is in reality at least four times as large as France, or eight times as large as Italy!

of the Euphrates. It is clear therefore that he had no idea of the manner in which the southern portion of Arabia runs out into the projecting land of Oman, though he was of course aware that it here sent out a great promontory to the entrance of the Persian Gulf.

§ 14. Concerning the Red Sea itself and its western, or, as it was called both by Greeks and Romans, the Troglodytic, coast, Pliny had of course abundant means of information, both from the earlier writers to whom we have already referred, such as Agatharchides and Artemidorus, and from the more recent *peripli* of voyagers to the Land of Spices and to India. He has however given us comparatively few details. But he has correctly distinguished the three cities of the name of Berenice, which it appears were often confounded together: the first being the well-known city of the name, to which led the overland route from Coptos: the second, which he distinguishes by the epithet Panchrysos, known also as Berenice ad Sabas: the third, which he terms Berenice Epideires, from its situation on a narrow neck of land or promontory called Deire. This was regarded by him as the headland bounding the Straits or narrowest entrance into the Red Sea, which he describes as only seven miles across.[7] In connexion with Ptolemaïs Epitheras he notices especially the astronomical observations by which Eratosthenes had connected its position with that of Meroë and Syene, and had thus, as he rhetorically phrases it, "detected the secret of the world."[8] But the most important addition that he makes to the knowledge of this part of the coast is undoubtedly his notice of Adulis, which was unknown even by name to Strabo, but in the time of Pliny

[7] This is not quite correct; the promontory of Deire (now called Ras Bir) being considerably to the south of the narrowest part of the strait, which is directly opposite to Cape Bab el Mandeb; but as there is no marked headland on the western side, except Deire, the expression may perhaps be justified.

[8] vi. 29, § 172. "Res ingentis exempli locusque subtilitatis immensæ, *mundo ibi deprehenso*, cum indubitata ratione umbrarum Eratosthenes mensuram terræ prodere inde cœpit." The sort of simple wonder with which Pliny regards the astronomical observations of the Greeks, wherever he refers to them, is not a little amusing.

had become the most important emporium on the coast, and was the place to which the native productions of the interior—ivory, rhinoceros horns, hippopotamus hides, tortoise shell, and slaves—were brought down for export.[9] This extensive trade, which is fully confirmed by the Periplus,[1] but of which no trace is found in earlier writers, arose doubtless from the establishment in the interior of a comparatively civilized community, of which Axuma was the capital. No mention of that city however is found in Pliny, though it was well known to the author of the Periplus.

Of the coast of Africa outside the Straits of Bab-el Mandeb his knowledge is singularly meagre. He mentions indeed the Sinus Abalites, and beyond it the port and headland of Mossylum, which was the principal market for the cinnamon that was brought from the interior.[2] Beyond this he tells us some writers placed a town called Baricaza.[3] The promontory of Mossylum he appears to have regarded,—following the authority of Juba,—as the easternmost point of Africa, from whence the coast trended away to the south and west.[4] But he has no mention of any promontory answering to Cape Guardafui—the Southern Horn (Noti Keras) of Eratosthenes and Strabo, and the Promontory of Spices (Cape Aromata) of the Periplus and Ptolemy: while no trace whatever is found in his work of that greatly enlarged knowledge of the eastern coast of Africa, which forms so prominent a feature in the nearly contemporary Periplus.[5]

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[9] Ibid. § 173.

[1] *Periplus Maris Erythr.* §§ 4–6.

[2] Plin. vi. 29, § 174.

[3] "Aliqui unum Aethiopia oppidum ultra ponunt in littore Baricaza," § 175. No such name is found in any other writer in connection with Ethiopia or Africa, and it is difficult not to suspect that the place really referred to is the celebrated city of the name *in India*, the name of which might well have been introduced in connection with the trade of these regions, in a manner that Pliny misunderstood, so as to place the city itself in Ethiopia. We have seen that he has no notice of the Indian Barygaza in its proper place.

[4] "A Mossylico promontorio Atlanticum mare incipere vult Juba, præter Mauretanias suas Gades usque navigandum Coro." Ib. § 175.

Even Ptolemy assigns to this promontory a far more prominent position than it is really entitled to claim.

[5] The passage just cited from Juba shows clearly how little notion he possessed of the vast extension of Africa towards the south.

§ 15. With regard to the interior of Africa generally he was little in advance of his predecessors: but we are indebted to him in this part of his work for having preserved to us several records of great interest,—the account of the exploration of Ethiopia and the upper course of the Nile by the officers sent out by Nero; and that of the campaign of Cornelius Balbus against the Garamantes. Both these expeditions and their geographical results have been already discussed. No further attempts seem to have been made before the time of Pliny to penetrate into the interior: the real heart of the great continent was still unapproached, and neither Greek nor Roman writers appear to have had the least suspicion of the great extent of fertile and populous country that lay beyond the broad desert barrier of the Sahara. Indeed, according to the theory universally received among them, these regions were uninhabitable on account of the heat.

Unfortunately the really valuable materials just referred to, are mixed up by Pliny, with his usual want of critical discernment, with a mere farrago of miscellaneous information, compiled from a number of different authors, most of whom are otherwise unknown:[6] and the result is a confused mass of statements, out of which it is difficult, if not impossible, to extract any consistent or intelligible conclusions.[7] It seems clear that the geography of the remote regions of Ethiopia, and the neighbourhood of the Upper Nile, was a favourite subject, as might well be conceived, with the Greek writers of Alexandria: and that many of these had collected a number of hearsay reports and vague rumours which there were no means of sifting or examining. As far as Meroë and its neighbourhood they had full and satisfactory information;

[6] See Chapter XX. p. 184 and Chapter XXIII. p. 347.

[7] Mr. Cooley (*Ptolemy and the Nile*, p. 17) justly remarks on this part of Pliny's work that "the deficiency of his general views is rendered more remarkable by the contrast with his abundant information." He had undoubtedly ample materials at his command, but was wholly destitute of either the judgement or knowledge to enable him to sift or arrange them; and the consequence is that he has presented them to us in a form that renders them wholly useless.

but beyond that all was vague and uncertain. The fluctuating character of the names in barbarous countries is a fact too familiar to the modern geographer for us to wonder at the almost total discrepancy of his authorities in this respect.[8]

It is singular that one of the few points which he treats as "generally agreed upon" is the utterly erroneous conclusion that the southern ocean lay at a distance of 625 Roman miles (i.e. 5000 stadia) to the south of Meroë.[9] Such a statement could be nothing more than a theoretical assumption: yet it seems to have come to be recognized as an undoubted geographical fact, like the configuration given by Eratosthenes and Strabo to the eastern and northern shores of Asia. But in this instance the error is the more inexcusable, as it is almost certain that in the time of Pliny the eastern shores of Africa had been already explored far beyond the assumed latitude, though, as we have seen, he neglected to avail himself of the new information thus laid open to him.

§ 16. It is clear that Pliny accepted the conclusion of Eratosthenes, which had been generally adopted by subsequent writers (including Juba, whom Pliny principally followed), with regard to the manner in which the coast of Africa trended away from its eastern extremity (opposite to Arabia) towards the Western Ocean and the coast of Mauretania. He thus describes Ethiopia—including under that appellation all the southern portions of the African continent—as extending from the south-east towards the south-west:[1] a strange mode of expression, but which can bear no other signification than that above referred to. But here he had of course no materials

[8] See Note B, p. 440.

[9] "In totum autem ab oceano ad Meroën DCXXV M. P. esse *inter auctores* fere convenit," vi. 30, § 196. This view may be considered as originating with Eratosthenes, who had drawn his first parallel of latitude through the land of the Sembritæ, and the Region of Cinnamon, at 3400 stadia south of Meroë (Chapter XVI. p. 638). He must of course have conceived the Southern Ocean as *somewhat* further to the south, but there is no statement in the extant remains of his works, as to the distance at which he fixed it. Strabo, as we have seen, placed it conjecturally about 4000 stadia south of Meroë. (See Chapter XXII. p. 328.)

[1] "Sita est Æthiopia ob oriente hiberno ad occidentem hibernum," vi. 30, § 197.

at his command, and when he comes to the western coast, approaching Mauretania, where he might have availed himself of the important discoveries of Hanno, as well as the later observations of Polybius, his description becomes a mass of inextricable confusion. It is clear that he had never seen the original narrative of the voyage of Hanno,[2] and throws doubt even upon the historical fact of his having founded Carthaginian settlements upon this coast, while he picks up at second hand some of the detached circumstances of a marvellous character, such as the mountain called Theon Ochema, burning with perpetual fire, the river Bambotus swarming with crocodiles, and the islands of the Gorgons, from whence Hanno had brought home the hairy skins of two of the women.[3] But it would have been utterly impossible, had not the original narrative been preserved, to have identified any of these localities, or arrived at any sound conclusion concerning the geographical results of this memorable expedition.

Almost equally unsatisfactory is his treatment of the voyage undertaken by Polybius along the western coast of Africa after the fall of Carthage: a document which would undoubtedly have been of the highest value to us, had it been preserved in an original or authentic form, but from which, in the condensed summary that Pliny has transmitted to us, it is impossible to extract any definite geographical information.[4] On the other hand we are indebted to him for his extracts from Statius Sebosus and Juba concerning the Fortunate Islands, as well as for his account (imperfect as it is) of the march of Suetonius Paulinus across the Atlas. Both of these are real contributions to our geographical knowledge.[5]

§ 17. Of the north of Africa, extending from the shores of the Ocean to the confines of Egypt, Pliny's knowledge was undoubtedly more complete than that of any preceding geo-

[2] See on this point, Chapter VIII. p. 328.

[3] vi. 31, § 200.

[4] This account has been already examined. See Chapter XVII., Note B.

[5] See Chapter XX. pp. 173, 175, and Chapter XXIII. p. 349.

grapher. He here enjoyed the advantage of following Juba, who from his position naturally possessed exceptional means of information: while the whole of these provinces had been in his time brought under the direct administration of Rome, and were becoming gradually pervaded by Roman civilization. The foundation of numerous colonies along the coast was one of the most effective means of introducing this improved culture. In the case of Mauretania these colonies were not limited to the Mediterranean coast, but three of them, Tingis, Zilis, and Lixus were established on the western or Atlantic shore: while two others, Babba and Banasa, were founded in the interior, but on the western slopes of Mount Atlas. Beyond Lixus (the modern El Araich), at a distance of 120 Roman miles, was a town called Sala (the modern Sallee, long celebrated as a resort of pirates) which appears to have been the last outpost of Roman civilization in this direction, and is described by Pliny as bordering on the untrodden desert, and infested by herds of elephants, but still more by the neighbouring barbarians, whom he calls Autololes.[6] Beyond this, all appears to have been vague and uncertain. He adds however, on the authority of native informants (doubtless collected by Juba), that 150 miles from Sala was a river called Asana, having a good port at its mouth; beyond that was another river called Fut, and from thence 200 miles to Dyris, the native name for Mount Atlas. Here the distances are overstated: but in other respects the account is trustworthy and leads us distinctly to the point where the great chain of Atlas descends to the sea at Cape Ghir, (the promontory of Hercules of Ptolemy) the name of which perhaps retains a trace of the native appellation of the range.

But even with regard to the interior of the province itself, and especially to Mount Atlas, Pliny complains that the most

[6] "Oppidum Sala ejusdem nominis fluvio impositum, jam solitudinibus vicinum, elephantorumque gregibus infestum, multo tamen magis Autololum gente." v. 1; § 5. Sala always continued to be the last town in the Roman province; though we find in the Itineraries a mere outpost (exploratio) called Mercurius, 16 M. P. further south (Itin. Ant. pp. 3, 6).

fabulous and contradictory accounts were still current in his day; a circumstance for which he blames the carelessness and want of curiosity of the Roman authorities, who preferred inventing falsehoods to investigating the truth.[7] Yet the forests were already explored in quest of ivory and of the beautiful wood called *citrus*, so much valued by the Romans for tables;[8] while the rocks on the seashore were diligently ransacked for purple.[9]

§ 18. With the northern provinces along the Mediterranean, Mauretania, Numidia, and Africa properly so called—or rather the province to which that name was officially restricted—Pliny was of course well acquainted, and he has given us, in the same manner as with the other settled provinces of the Roman Empire, a tolerably full *paraplus* or description of the sea coast, its headlands and rivers, as well as the towns along its line, but this is followed as usual by a long list of the towns in the interior of each province, in alphabetical order, so as to afford no clue to their position. His account of the Cyrenaïca also is clear and distinct, but his description of the two Syrtes and the intermediate region is singularly confused, and would in fact, if it stood alone, be utterly unintelligible. It is much less surprising that this should be the case with regard to the tribes of the interior, which had been in all ages very imperfectly known; but considering the light that had been recently thrown upon this subject by the expeditions of Suetonius

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[7] "Quinque sunt, ut diximus, Romanæ coloniæ in ea provincia, perviumque famæ videri potest; sed id plerumque fallacissimum experimento deprehenditur, quia dignitates, cum indagare vera pigeat, ignorantiæ pudore mentiri non piget, haud alio fidei proniore lapsu quam ubi falsæ rei gravis auctor exsistit." v. 1, § 2.

A remarkable passage, which serves to explain the little progress made in sound geographical knowledge under the Roman Empire. The expedition of Suetonius Paulinus, already referred to, constituted an exception; but that also was probably undertaken with a military rather than a scientific object.

[8] Of this Pliny speaks more fully elsewhere (xiii. 15, §§ 91–102), and relates details of the almost fabulous prices given for tables of this kind; an extravagant passion which he adds was carried by the Romans of his day to an "insanity" equal to that of the Roman ladies for pearls.

[9] The Mauretanian or Gætulian "purple" was probably that derived from the lichen called *orchil*, which is extensively used in dyeing. See Chapter XX. Note E, p. 203.

Paulinus and Cornelius Balbus, it is certainly strange to find that the ideas of Pliny with regard to this part of Africa were not more clear and satisfactory. He was acquainted indeed with the name of Phazania, corresponding to the modern Fezzan, but does not indicate its connexion with the Garamantes (whom he names separately), and appears to have placed it between the Garamantes and the neighbourhood of the Lesser Syrtis, regarding Cydamus (Ghadamis) as its capital.[1] At the same time he describes Augila, the position of which was so well known to the Greek geographers, in a manner very confused and unintelligible. We are however indebted to him for having preserved to us the particulars already referred to of the expedition of Cornelius Balbus against the Garamantes: an event of the highest geographical interest.

§ 19. But obscure as were the ideas of Pliny concerning the interior of Africa, this part of his work is deserving of attention as containing the first distinct notice of the great river that has attracted so much attention in later times under the name of the Niger. For this information he was doubtless indebted to Juba, who, as we have seen, in the strange theory that he had framed with respect to the origin and course of the Nile, had introduced this river as one of its component parts.[2] In another passage Pliny speaks of Gætulia as extending "to the river Nigris, which separates Africa from Æthiopia."[3] And again, after enumerating among the Ethiopian nations of the interior[4] "the Nigritæ, so called from the river already mentioned," he adds, "the river Nigris has the

[1] v. 5, § 35.

[2] See Chapter XX. p. 175.

[3] v. 4, § 30. "Et tota Gætulia ad flumen Nigrin, qui Africam ab Æthiopia dirimit."

[4] These he enumerates in the following order: first, the Egyptian Libyans, then the White Ethiopians (Leucæthiopes). Above them the Ethiopian nations, the Nigritæ from the river already mentioned, the Gymnetes Pharusii, and then the Perorsi who adjoined the Ocean on the confines of Mauretania (vi. 8, § 43). Of these the Pharusii and Nigritæ were already mentioned by Strabo, who seems to have placed them south of the Great Desert (see Chapter XXII. p. 331). The Perorsi were apparently scattered along the west coast of the Atlantic.

same nature as the Nile: it produces reeds and papyrus, and the same kinds of animals, and it becomes swollen at the same period."[5] As there is no river to the north of the Great Desert to which these characters can possibly be applied, it seems certain that they must refer to the great river of Central Africa, the Joliba or Quorra, known to modern geographers as the Niger, some notice of which may have been carried by native caravans across the desert to Mauretania.[6] But, as usually happens in such cases, these vague reports afforded no definite idea of its geographical position, and Pliny at least was evidently quite unaware of the vast extent of desert which separated it from the land of the Gætulians.

§ 20. On the much controverted question of the source of the Nile, Pliny contents himself with giving "the result of the inquiries" of king Juba in the form of the elaborate, but utterly unfounded, theory which has already been examined.[7] With regard to the latter part of its course, through Ethiopia, he supposed it to be first called Astapus, where it was first known in the interior above Meroë, while he gave the names of Astobores and Astosapes to the two arms that encircled the great island of that name.[8] He was evidently misled (as was Ptolemy after him) by the name of "island" given to the district of Meroë by the Alexandrian geographers, into supposing it to have been really an island, surrounded by the two arms of the Nile, instead of being, as Eratosthenes rightly conceived it, merely a peninsular tract between the Nile itself and its tributary the Astaboras.

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[5] v. 8, § 44.

[6] We have seen that already in the time of Strabo such caravans occasionally crossed the desert (Strabo, *l. c.*), and doubtless this intercourse would have increased as Mauretania and Numidia became more settled and civilized. But in the absence of camels all such communication must always have been uncertain and difficult.

[7] See Chapter XX. p. 174.

[8] v. 10, § 53. In regard to these names Pliny tells us, first, that Astapus means in the Ethiopian language "the water flowing from darkness" (aquam e tenebris profluentem);" then, that Astobores means "a branch of the water coming from darkness" (ramus aquæ e tenebris profluentis), while Astosapes adds the sense of its being a lateral or side stream (quod lateris significationem adjicit; but the reading *lateris* and the sense is doubtful).

His description of Egypt is singularly meagre and jejune, presenting a striking contrast to that of Strabo: and though his enumeration of the Nomes, which has the air of being derived from an official source, is of value to the topographer, it is as usual devoid of any attempt at geographical arrangement, and he has wholly failed to give any geographical picture of the country, easy as it was to have done so in a region of so peculiar a natural conformation. He has however introduced some interesting particulars with regard to the inundation of the Nile, and its effects on the surrounding country, according to the height it attained in different years.[9]

§ 21. Pliny concludes his elaborate review of the geography of the world with a statement of the measurements of the different seas and continents according to various authorities, especially Polybius, Artemidorus, and Agrippa: and sums up the whole by the conclusion—rather startling to modern readers—that Europe is nearly half as big again as Asia, and considerably more than twice as large as Africa. If the three continents are taken together, he adds, it will appear that Europe is a little more than $\frac{1}{3} + \frac{1}{8}$ (or $\frac{11}{24}$ths) of the whole; while Asia contains $\frac{1}{4} + \frac{1}{14}$ (or $\frac{9}{28}$ths), not quite a third; and Africa $\frac{1}{5} + \frac{1}{60}$ (or $\frac{13}{60}$ths), very little more than a fifth![1] Strange as these statements sound to us, who are familiar with the vast extent of Asia and Africa, beyond the limits known to ancient geographers, they are at the same time utterly at variance with the conclusions arrived at by Eratosthenes and Strabo, and it is difficult to comprehend by what process Pliny was led to adopt so erroneous a result.

Lastly, in order, as he tells us, to leave out nothing that can contribute to the clear understanding of his subject, he proceeds to give what he terms "an exquisitely subtle dis-

[9] v. 9, §§ 57, 58.

[1] vi. 33, § 210. "Apparet ergo Europam paulo minus dimidia Asiæ parte majorem esse quam Asiam. Eandem altero tanto et sexta parte Africæ, ampliorem quam Africam. Quod si misceantur omnes summæ, liquido patebit, Europam totius terræ tertiam esse partem et octavam paulo amplius, Asiam vero quartam et quartamdecimam, Africam autem quintam et insuper sexagesimam."

covery of Greek science," in the circles or parallels of latitude drawn along the surface of the world, with the regions or localities through which they passed. He adds in each instance the proportion of the gnomon of the sundial to its shadow, and the length of the longest or solstitial day. This, as we have seen, had been already done by Hipparchus, who was followed by Strabo, and doubtless by many other Greek geographers. But in attempting to enumerate the geographical points through which these circles would pass, Pliny has fallen into such strange and unaccountable errors, that the table he gives us, far from contributing to a clear understanding of the countries which he has already described, would only tend to throw them into inextricable confusion.[2] It is clear from this passage, as from several others, that he himself had not mastered the very elements of mathematical geography, and had no clear conception whatever of the meaning of what he was reporting. But as he professes to derive the whole statement from Greek authorities, we are wholly at a loss to explain how he could have wandered so widely from all the conclusions generally received among them, and produced a list as much at variance with the systems of Eratosthenes or Hipparchus, as it is with geographical truth.

[2] See Note C, p. 441.

NOTE A, p. 409.

SOURCES OF THE TIGRIS.

THE Tigris may be considered as having two, or rather three, principal sources, forming distinct arms, all containing a large quantity of water. Of these, the western arm, usually considered at the present day as the main stream, which is that flowing by Diarbekir, takes its rise in a small lake or pool, about 50 G. miles N.W. of that city, and not more than 5 from the Euphrates at Telek. Singularly enough this arm of the river appears to have been ignored in ancient times, and we find no mention of it in any ancient geographer.

About 45 miles below Diarbekir, this river is joined by an affluent, the Batman Su, having nearly as large a body of water as itself, which flows from north to south, and has its sources in the range called by the ancients Niphates. Again, about 35 miles lower down, the united streams receive an important accession from the north in the river now known as the Sört Su, or river of Surt, which is itself formed by two considerable rivers, the one descending from Bitlis in the neighbourhood of Lake Van, the other called the Bohtan Tchai, having its sources far away to the east. This last river, which is probably the Centrites of Xenophon, was not regarded by the ancients as an arm of the Tigris, but this name may very probably have been given to the river of Bitlis, which has its sources near enough to the Lake of Van to afford some colour for the popular notion that it derived its waters from thence. Other writers however contend that the river which joins the Tigris at Zeiwah, the Batman Su, has the better claim to be regarded as the Tigris of the ancients, and it is difficult to decide between them.

The sources of the Bohtan Chai, which is undoubtedly entitled to rank as the eastern arm of the Tigris, have been for the first time explored in quite recent times by Mr. Taylor, who found that its principal source, the Möx Su, issues from a cave at the foot of the mountain of Aghovar, which is separated from the Lake of Van by only about 30 miles of mountainous country: a circumstance which, as he observes, may have given rise to the notion enter-

tained by Strabo as well as Pliny, of the Tigris deriving its waters from that lake. (See Mr. Taylor's paper in the *Journal of the Geographical Society*, vol. xxxv. p. 49.)

NOTE B, p. 431.

WRITERS ON ETHIOPIA.

Among the authors thus cited, the most important is Bion, a native of Soli in Cilicia, who is noticed also by Diogenes Laertius (iv. 58) as having written a work on Ethiopia (Αἰθιοπικά), and is cited in one passage by Athenæus (xiii. p. 566, c). His date is wholly unknown; but he appears from Pliny to have given a number of minute topographical details concerning the valley of the Nile as far as Meroë.

Aristocreon, referred to in the same passage (vi. § 183), and also with regard to the length of the course of the Nile in Egypt (v. 9, § 59), is evidently the same quoted at second hand by Ælian (*Hist. Anim.* vii. 40) for a fabulous story concerning Ethiopia; but nothing more is known of him.

Basilis, associated with the preceding by Pliny (*l. c.*), but not again cited as an authority, is noticed by Agatharchides (§ 64) among the writers who had treated of the eastern portions of the world, and must therefore have been earlier than that author. He appears to have also written a work on India, which is quoted by Athenæus (ix. p. 390 b).

Two other authors, cited by Pliny as authorities, had the great advantage of personal knowledge of the localities: Dalion, as he tells us, having ascended the Nile far above Meroë (Dalion ultra Meroën longe subvectus, vi. § 183): he appears to have been of an earlier period than the two preceding. The other, whom he calls Simonides minor, had actually resided for five years at Meroë while engaged on his work on Ethiopia (*l. c.*). Unfortunately Pliny does not indicate the particular information he derived from these authorities; and has undoubtedly mixed up the statements of different writers, without any attempt to reconcile or explain the discrepancies between them.

NOTE C, p. 438.

PLINY'S ACCOUNT OF THE CLIMATA.

It is clear, however, that Pliny here refers to the *climata* in the sense in which the term was used by Ptolemy and later geographers, as signifying the portions or segments of the world included between two parallels of latitude marked by the successive steps in the astronomical changes of the day and night, &c. It is in this sense that he himself calls them "segmenta mundi;" and that he describes them as "containing" or including whole countries and regions. At the same time he not only calls them "circles" or "parallels" (quæ nostri circulos appellavere, Græci parallelos, § 211), expressions that could hardly apply to anything but the parallels that bounded them; but he gives for each circle the definite relations of the gnomon to its shadow, and the length of the longest day, which of course *can* refer only to the definite circles that limit each segment. It seems certain that throughout this passage Pliny has confounded the two things: the segments of the earth's surface intercepted between two such parallel circles, and the circles themselves. It is these last which are given us by Strabo from Hipparchus, and which that geographer has correctly designated (according to his ideas) by the several points through which they actually pass. But Pliny, by confounding these parallels of latitude with the extensive spaces included between them, has thrown the whole subject into confusion.

But after making full allowance for this disturbing cause, there still remains an amount of error in his statements for which it is very difficult to account. Thus in regard to the very first segment which he describes in detail, he includes in it as approximately parallel with Alexandria and Lower Egypt, Babylonia, Gedrosia, Carmania, Persia, Parthyene (!), Aria (!), and the southern coast of India. But even in the much better known regions on the Mediterranean he describes the second circle as including Cyprus, Crete, and Lilybæum in Sicily, while he places Syracuse, Catana, and "the middle of Sicily" in the third section, and the north of Sicily in the fourth, while Locri and Rhegium immediately adjoining the Sicilian Strait are transferred to the fifth section. These last mistakes we are wholly unable to account for. But in some instances he was evidently misled by Hipparchus, or rather by a

misconception of the statements of that author; with which he appears, as is so often the case in his work, to have mixed up others derived from different sources without any attempt to distinguish them.

After quoting these conclusions of ancient Greek authors (antiquorum exacta), he adds that the most diligent recent writers had added to these three other segments; the one extending from the Tanaïs across the Lake Mæotis and the Sarmatians to the Borysthenes, and thence through Dacia and a part of Germany and Gaul to the Western Ocean; these had a solstitial day of sixteen hours; the next, whose longest day was seventeen hours, included the Hyperboreans (!) and Britain; the third passed through Scythia from the Rhipæan Mountains to Thule; here the days and nights were at certain seasons continuous.

CHAPTER XXV.

PERIPLUS OF THE ERYTHRÆAN SEA.

§ 1. VERY nearly contemporary with Pliny was the anonymous treatise to which we have already had frequent occasion to refer, known as the PERIPLUS OF THE ERYTHRÆAN SEA. This little work is a document of a kind wholly unlike any other that has been preserved to us from antiquity. It is not a mere geographical description of the coasts like the Periplus of Scylax, or that of the Euxine by Arrian. Nor is it a journal or record of an individual voyage, like those of Nearchus and Hanno. It is rather a kind of manual for the instruction of navigators and traders in the Erythræan Sea, in the widest sense of that term, comprising the Arabian Gulf (or what we now call the Red Sea), the coasts of Africa outside the Straits of Bab el Mandeb as far as they had been then explored, as well as those of Arabia and India down to the extremity of the Malabar coast, with a few brief notices of the more distant portions of India, and even China. It describes in more or less detail the geography of the different coast-lines, with their several ports, as well as the prominent natural features of each, but adds, in regard to each port mentioned, a full notice of the articles imported and exported, which are given with a minuteness of detail that shows beyond a doubt that it is written by a merchant for the use of merchants.[1] At the same time it is evident from many circumstances that it is the result (in great part at least) of personal experience and observation; and as a

[1] It may be observed that while the *exports* from these distant regions, being the natural productions of the countries, would be objects of general interest, the *imports*, i.e. the merchandise which it was suitable to take thither from Alexandria, were a matter of very little interest to anyone but a trader. For the same reason very little notice has been taken of these last in the following abstract of the Periplus.

consequence of this, we find when we come to examine it, that its geographical statements are among the most satisfactory and trustworthy that have been transmitted to us by any ancient writer.

§ 2. It is unfortunate that the author and the date of this little treatise are equally unknown to us; so far at least as any external evidence is concerned. The former indeed is of comparatively little moment, for the name would doubtless convey no further information. It is obvious from internal evidence that the writer was a Greek merchant of Alexandria in Egypt, and a person of no pretensions to literary merit or elegance of style.[2] The attribution of it, in the only extant manuscript, to the historian Arrian is doubtless owing only to its being found immediately following the Periplus of the Euxine Sea by that author, and has been unanimously rejected by all the later editors.[3] But while they are all of one accord upon this point, which does not indeed admit of a question, there is great discrepancy among them with regard to the date. It was brought down by Dodwell as late as the reign of M. Aurelius and L. Verus: while Dr. Vincent returned to the opinion of Salmasius, who had pronounced it about contemporary with the work of Pliny.[4] The general agreement between the two is indeed such as to leave no doubt upon this point: at the same time that the hypothesis advanced by some

[2] This is obvious on the most cursory inspection. The peculiarities of his diction are probably in some instances such as were usual at Alexandria in his day. In other cases he introduces mere Latin words under a Greek form, such as δηνάριον for coined money in general, σκουτουλάτος for "scutulatus," as descriptive of a certain kind of garment, &c.

[3] Some, however, while admitting that it is impossible to ascribe the little work in question to Arrian of Nicomedia, the historian of Alexander, have supposed it to be the work of a merchant of that name. Thus Fabricius, in his edition of the little treatise (8vo Dresdæ, 1849), says of it: "Auctor hujus Peripli est Arrianus, mercator Alexandrinus, qui regnante Claudio imperatore vixit;" and Dr. Vincent, though less decidedly, inclines to the same view. But it seems more probable that the name of Arrian is a mere mistake, arising from the cause stated in the text. See C. Müller, *Prolegom.* p. 96.

[4] The whole question has been fully discussed by Dr. Vincent (*Commerce and Navigation of the Ancients in the Indian Ocean*, vol. ii. pp. 3–6, 49–59), and by Dr. C. Müller in the Prolegomena to his edition of the *Geographi Græci Minores*, tom. i. p. 95–111.

authors that the Periplus was the authority from which Pliny derived his account of the voyage to India, as practised in his time, has been shown to be untenable.[5] It would indeed appear more probable from a comparison of the two that the information furnished by the Periplus is the later, as well as the fuller, account. But a more definite ground for determining within very narrow limits the date of this valuable document is furnished by the mention of a king named Zoscales, as reigning in his time over the kingdom of Auxuma in Ethiopia.[6] Dr. C. Müller was the first to point out that this name may in all probability be identified with a certain Za Hakale, whom we learn from the Abyssinian annals to have reigned from A.D. 77 to 89: thus bringing us to the reigns of Titus and Domitian at Rome, a conclusion entirely in accordance with all the other internal evidence.[7] We may therefore place the Periplus within about ten years after the death of Pliny.

There can be no doubt that the impulse given to navigation and the trade to India by the discovery of Hippalus, and the opening out of direct communication with the coast of Malabar, would lead to the compilation of many small treatises or Peripli, more or less analogous to the one we possess. It is obvious that Pliny had a document of the kind before him, in writing the account already referred to; though it would appear to have been of a much less complete character, and to have been confined to the direct voyage to the coast of Malabar.[8] Ptolemy also unquestionably made use of some similar authority; but notwithstanding his later date, his details are by no means so trustworthy as those of the Periplus. The accuracy and clearness of the statements found in this little work, as well as the proofs it affords of a great extension

[5] This point has been in my opinion fully established by M. Müller, *Prolegom.* pp. 99, 100.

[6] *Periplus*, § 5, ed. Müller.

[7] C. Müller, *Prolegom.* p. 97. M. Vivien de St. Martin, who adopts his conclusion, adds some useful remarks on the trustworthy character of the lists of these monarchs preserved in the Abyssinian chronicles (*Le Nord de l'Afrique dans l'Antiquité*, p. 196).

[8] See Chapter XXIV. p. 417.

of geographical knowledge in regard to the coasts both of Africa and India, are such as to entitle it to a full and careful consideration.[9]

§ 3. The author begins with a brief description of the voyage down the Red Sea, starting from Myos Hormos, which he calls the first of the regular trading ports[1] on the Egyptian coast. Following this downwards came Berenice, 1800 stadia lower down; and about 4000 stadia farther Ptolemaïs, called Theron, from its being the station for the hunters of the Ptolemies. It was not a good port, and though it still exported some ivory, as well as tortoiseshell, it was evidently in his time a place of but little trade. About 3000 stadia farther south was Adulis, a small place, but carrying on a considerable trade. It was situated on a deep gulf, and served as the place of export for the newly-risen kingdom of Ethiopia, the capital of which was at Auxuma (Axum), at a distance of eight days' journey in the interior.[2] We have seen that Pliny was the first to mention Adulis, which had been unnoticed by earlier writers, and we learn more fully from the Periplus the causes of its rise and prosperity. The extension of the power of Zoscales, whose capital was at Auxuma, over all the surrounding regions, is

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[9] C. Müller justly remarks of this little treatise that "rerum traditarum copia, varietate, fide, utilitate, adeo præstat, ut pretiosissimi thesauri loco habendus sit." *Prolegom.* p. 95. Mr. Cooley also says: "The author of the Periplus differs from Ptolemy in several important particulars; and wherever this is the case, every consideration, both of internal and external evidence, is in favour of the former." (*Claudius Ptolemy and the Nile*, p. 56.)

[1] *πρῶτος τῶν ἀποδεδειγμένων ὅρμων*, § 1. This phrase, as well as that frequently used by our author of *ἐμπόρια νόμιμα*, clearly points not only to the existence of a regular established trade, but of fiscal regulations only allowing vessels to trade at certain ports. Such regulations were indeed almost a necessary consequence of the system of heavy duties levied both on imports and exports in the days of our trader.

[2] It was three days' journey from Adulis to Coloë, and five days from thence to Auxuma. Coloë must therefore have been situated somewhere in the neighbourhood of Dixan. The position of Adulis itself, on the west side of the bay now called Annesley Bay, where its ruins are still visible, is familiar to all since that bay was made the head-quarters of the British expedition to Abyssinia in 1867. Its site was first pointed out by Mr. Salt in 1813.

The ruins of Axum were described by Bruce, as well as subsequently by Lord Valentia and Mr. Salt; and have been since repeatedly visited by more recent travellers.

confirmed by the testimony of the inscription on the monument of Adulis, which must be assigned to a monarch nearly contemporary with the Periplus.[3] At the time when our document was compiled Auxuma had become the chief *entrepôt* for the ivory of all the regions on the Upper Nile, and this, together with tortoiseshell and rhinoceros horn, were the chief exports from Adulis, in return for which they imported a variety of European wares from Alexandria, as well as iron, steel, and cotton goods from India.[4]

The small number of points indicated along this line of coast doubtless arises from the circumstance that the navigation being well known, while the immediate neighbourhood of the coast was rocky and dangerous, the traders used to run direct from one established port to another. Apparently also the smaller settlements founded by the Ptolemies, and mentioned by Agatharchides and the writers who followed him, had fallen into decay, and being no longer recognised as "regular" ports, had probably ceased to exist.[5] Our author adds that the voyage to Adulis from Egypt was habitually made from the month of January to September, but that the best season was September.[6]

§ 4. Proceeding onwards from Adulis he tells us that the gulf bears away to the east, and is contracted into its narrowest breadth opposite to the Aualitic Gulf. This of course refers to the well-known Strait of Bab el Mandeb, but the locality of this important point and the geographical features of this part of the coast are imperfectly indicated. No mention is made of the town or headland of Deirè (Cape Bir), which forms the actual boundary of the strait on its southern side, and which

[3] See Chapter XV. p. 586. Concerning the age of this later part of the inscription, see Boeckh, *Corp. Inscr. Gr.* vol. iii. p. 512.

[4] *Periplus*, § 4.

[5] Most of these smaller settlements seem to have been established by the Ptolemies principally with a view to catching elephants, a practice which had now fallen into disuse; the ivory was brought from the interior by the native tribes.

[6] Both here and elsewhere (§§ 6, 24, 39), in mentioning the months suitable for sailing, he always adds the Egyptian name of the month—Tybis, Thoth, Epiphi, &c.—as being doubtless more familiar to Alexandrian traders than the Latin one.

was well known to Artemidorus and Strabo.[7] The Aualitic Gulf must be the deep bay that indents the coast of Africa immediately beyond Cape Bir, and the emporium of Aualites, from which it derived its name, may be identified with Zeilah, a short distance to the east of it. Our author appears to fix this at a distance of about 4000 stadia from Adulis.[8] Proceeding from thence eastward along the coast of Africa, to which he gives the name of Barbarica, he mentions in succession between Aualites and Cape Aromata (Guardafui), several emporia or places of trade, to which the productions of the interior—frankincense, myrrh, and other odoriferous gums, as well as ivory and tortoise-shell—were brought down for export. The first of these was Malao, distant 800 stadia from Aualites, the description of which, as sheltered by a promontory projecting from the east, enables us clearly to identify it with the modern Berbera, at the present day the most considerable trading-place on this coast. This was followed by Mundus at a distance of two days' sail, a safer port; and again after two or three days' sail came Mosyllum, the principal port for the export of cassia (cinnamon), on account of which it was frequented by ships of large size, though it had no harbour, but only an exposed and inconvenient roadstead.[9] Beyond that, after another two days'

[7] Artemidorus ap. Strab. xvi. pp. 769, 772.

[8] This distance is just about correct, if measured from Adulis to Zeilah, as certainly appears to be the meaning of the author (§ 7). Dr. Vincent erroneously supposes it to apply to the length of the coast of Barbaria (vol. ii. p. 125). That author's identifications of the ports between the Straits of Bab el Mandeb and Cape Guardafui are for the most part erroneous. But this coast was in his day so little known that he had very imperfect means of comparison. D'Anville had already correctly identified the port of Aualites with the modern Zeilah (still called by the native Somaulis Audal or Auzal) a place of considerable trade under the Arabs; and starting from this point there is little difficulty in determining the others.

[9] *Periplus*, § 10. We have already seen the importance attached to Mosyllum as a port by Pliny (vi. § 174); and this is confirmed by the repeated mention in our author of Mosyllitic commodities as equivalent to those of the coast of Barbaria in general. But its exact site has not been determined with any certainty, the distance from the Cape of the Elephant being only vaguely given as a voyage of two days, while there was no natural port to mark the locality; and the promontory of the same name, mentioned both by Pliny and Ptolemy could not really be a headland of any importance, there being none of a marked character west of that of the Elephant.

sail, was a promontory called "the Elephant," with a river of the same name, and a place called Acannæ, where there was a grove of trees producing frankincense of very superior quality. The promontory of the Elephant is certainly the same that is now called Ras el Fil, or Jebel Fil, which has the same signification: it is about 40 G. miles short of Cape Guardafui.[1]

§ 5. The whole of this coast from the opening of the Straits of Bab el Mandeb to Cape Guardafui is for the first time accurately described in the Periplus. It was known indeed in a general way to the Greeks from the time of Eratosthenes to that of Strabo, both of whom, as we have seen, were well acquainted with the promontory to which they gave the name of Noti Keras or the Southern Horn, by which they clearly meant to designate the Cape Aromata of the Periplus, the modern Guardafui. Artemidorus moreover had given some details respecting the coast, mentioning among other points the mountain headland of the Elephant, but he had no account of the distances, and did not mention any emporia or places of trade along the coast.[2] It is probable indeed that this trade had for the most part grown up in the interval. The productions of the African coast had doubtless from an early period been exported in small vessels to the opposite shores of Arabia, as still took place in the time of the Periplus;[3] but besides this, there had arisen at the latter period a considerable trade at these African ports on their own account, and we learn from our author that they imported European goods, including gold and silver plate, and ornamental glass wares, in return for their much valued native products.[4] The whole of this tract, to which our author applies the name of

Hence Mosyllum has been variously fixed by recent writers at Bunder Barth, near Ras Antarah, and in the neighbourhood of Ras Hadadeh, more than 40 G. miles farther west.

[1] Vincent, vol. ii. p. 138. Müller, *Not. ad Periplum*, § 11.

[2] Strabo, xvi. 4, § 14. See Chapter XVIII. p. 63.

[3] *Periplus*, § 7.

[4] Ibid. §§ 8–10. In addition to these, Roman money, both gold and silver (*δηνάριον χρυσοῦν τε καὶ ἀργυροῦν*) was introduced, though in small quantities (*οὐ πολύ*). It was probably intended for purposes of ornament, rather than as a medium of exchange.

Barbarice or Barbaria, though now inhabited only by the wild tribes of the Somauli, a very uncivilized race, had in the middle ages, when it was known as the kingdom of Adel, assumed a very different character, and risen to a state of prosperity almost equal to that of the opposite regions of Arabia.[5] Something of the same kind would appear to have taken place at the period of which we are now treating: and the ports on the African coast, which were popularly known as "those on the opposite side,"[6] were resorted to by large trading vessels from Alexandria as well as by the small country craft.[7] We are told moreover that they carried on direct trade with India; but no mention is found in connexion with this of the cinnamon for which their country was so celebrated, and which some modern writers have supposed to have been imported by them from Ceylon or the coast of Malabar.[8]

§ 6. We have seen that Pliny regarded the promontory of Mosyllum as the point where the coast of Africa changed its direction and trended away to the south and west, and though the author of our Periplus was better informed, as he distinctly describes the headland of Aromata as the eastern extremity of Africa:[9] yet he considered the coast as bearing away to the south from the Promontory of the Elephant, and again still more decidedly from beyond Opone, in a manner that shows he did not fully appreciate the importance of Cape Aromata as the main feature in the geography of all this part of Africa. He however gives us several details concerning that and the neighbouring promontories as well as ports: all which have

[5] Vincent, vol. ii. p. 122, who describes from the Portuguese authorities the state of things which they found when they first visited these seas.

[6] ἐμπόρια Βαρβαρικὰ, τὰ πέραν λεγόμενα, § 7. Hence the wares brought from thence are termed by our author περατικά, especially the frankincense, which he frequently mentions as λίβανος ὁ περατικός.

[7] *Periplus*, § 10. He expressly attributes the necessity for such larger vessels to the quantity of cassia (cinnamon) exported (ἐξάγεται δὲ ἀπὸ τῶν τόπων κασσίας χρῆμα πλεῖστον· διὸ καὶ μειζόνων πλοίων χρῄζει τὸ ἐμπόριον).

[8] Considering the nature and value of our authority, this circumstance appears to me conclusive against the hypothesis referred to.

[9] *Periplus*, § 12.

been fully verified by modern observations. Cape Aromata itself he describes as an abrupt headland, having a roadstead on its northern side, which was used as an emporium of trade, though from its exposed situation it afforded no protection against north winds; and when these blew, ships were obliged to run for shelter under a headland named Tabæ. This may be identified with the cape now called Banna, about 40 G. miles south of Guardafui: and at the same distance (400 stadia) beyond this, according to the Periplus, "after passing round a peninsula," was a place called Opone, a considerable emporium of trade.[1] The peninsula here mentioned can certainly be no other than the remarkable headland called Ras Hafoun (about 90 miles south of Cape Guardafui), an isolated table of rock, connected with the mainland by a mere spit of sand, and we thus obtain with certainty the position of Opone, a point of much importance for the geography of this coast.

It is remarkable that while we find in Pliny no notice of any points along this coast beyond the Mosyllitic promontory, even the name of Cape Aromata not being mentioned by him, and he had evidently no more idea than Eratosthenes or Artemidorus of the long stretch of the African coast to the southward, the author of the Periplus was not only well acquainted with the headlands and ports immediately beyond Cape Aromata, such as Tabæ and Opone, but was well aware of the fact that the shores of Africa for a long distance from thence had a general direction to the south, instead of trending away at once to the west, as supposed by all earlier geographers from Eratosthenes to Juba and Strabo.[2] This

[1] *Periplus*, §§ 13, 14. It is worth notice that among the articles imported into Opone and the neighbouring ports from Barygaza and other Indian places of export, our author mentions "the honey produced from a reed which is called *sacchari*." This is the first mention of sugar as an article of trade that is found in any ancient author, but the substance was well known to Pliny, who speaks of it as used in medicine (*H. N.* xii. 8, § 32).

At all these ports the author expressly mentions "cassia"—by which he undoubtedly means cinnamon, the *name* of which is not found in his little work—as one of the staple *productions* of the country.

[2] *Periplus*, §§ 12, 15.

important rectification of the map of the world was evidently due to the extension of trade in that direction: an extension which seems to have been coincident with that of the trade to India, and may very probably be referred to the same period:[3] at all events it is clear that in the time of the Periplus the eastern coast of Africa was habitually visited by merchants, and in constant relation with the ports of Arabia, as low down as Zanzibar, six degrees south of the equator. It is probable however that our author's personal experience did not extend so far, and his account of the coast of Azania, as he terms the east coast of Africa to the south of Opone, is much less full and circumstantial than that of the coast fronting Arabia, from Bab el Mandeb to Cape Guardafui.

§ 7. Still his statements, brief as they are, are intelligible and consistent, and the positions of the points named may be determined with reasonable certainty, at least within narrow limits.[4] South of Opone the coast for six days' voyage trended at first due south, and then to the south-west, and was marked by two long lines of continuous rocky cliffs, from which they derived the name of the little and great Apocopæ. Beyond this were six more days' voyage of low and sandy shores, hence called the great and little Ægialos: then followed the Courses (Dromi) of Azania, the one called that of Sarapion, the other that of Nicon: the aggregate distance being seven days' voyage. At the end of this navigation were the Pyralaan islands, from whence it was a voyage of two days and nights to a point on the mainland, opposite to an island named Menuthias, distant about 300 stadia from the land, low and covered with wood, and abounding in turtles, which were caught by the natives in a kind of wicker baskets. Two days' voyage beyond this, on the mainland, was a place called

[3] At the time of the voyage of Eudoxus, this part of the African coast does not appear to have been visited by Greek ships, and that navigator was only carried thither by chance. (See Chapter XVIII. p. 76.)

[4] The whole of this part of the eastern coast of Africa has recently been examined and described by Captain Owen (*Voyage to Africa, Arabia, and Madagascar*, 2 vols. 8vo. 1833).

Rhapta, the last emporium or commercial station along the coast, and a place of considerable trade.[5] It was subject, in virtue of some old established right, to the sovereign of the Mapharitic territory in Arabia (a portion of Yemen), from whom the merchants of Muza rented it, and carried on a regular trade thither with their own ships. This close connection with Arabia, while it explains the source of our author's information, is curious from its similarity to the present state of things, when Zanzibar and the neighbouring coast have long been subject to the Sultan of Muscat.

§ 8. If the above account furnishes us with few particulars, it may be observed that the eastern coast of Africa from Ras Hafoun southwards for above fifteen degrees of latitude presents scarcely any marked geographical features, and is a barren and inhospitable region, very little known or frequented even at the present day, and almost totally devoid of population. But it is interesting to find on our modern maps that just beyond Ras Hafoun to the south comes a long tract of rugged country, called Hazine (the rough ground),[6] presenting a bold and rocky front to the sea, while beyond this is a low tract called Sef Tweel, or the low shore, thus entirely confirming the correctness of our author's description.[7] The Pyralaan islands again, with which he associates a narrow channel, may be identified with the islands of Manda and Lamo (in about 2° S. lat), which are separated from the mainland by just such a narrow channel. From thence it is about three degrees, or 1800 stadia, to a point opposite Pemba, a large island, which may probably be identified with the Menuthias of the Periplus. Either this, or the neighbouring island of Zanzibar (better known in modern times), must have been the one meant, and it is impossible to decide positively between them, but as only

[5] *Periplus*, §§ 15, 16.

[6] It is evidently this name which was corrupted by the Greeks in our author's time into Azania, and on our modern maps into Ajan. The name, however, is extended by our author so as to apply to the whole east coast of Africa, from Cape Aromata down to Rhapta.

[7] See Owen's *Voyage to Africa, &c.*, vol. i. chap. xix.

one island is mentioned, though both are equally near the coast, it is probable that there was in fact a confusion between the two. Rhapta may probably be placed in the bight of the bay opposite to Zanzibar, not far from Bagamoyo, the present point of communication with the interior, and which from its position at the mouth of a considerable river, must always have had facilities for such intercourse. We thus find that the knowledge of the African coast had received at one stretch an extension of above 1200 geographical miles, and had attained very nearly to the farthest point with which the ancients were ever acquainted.[8]

Beyond Rhapta, our author tells us, nothing was known, and the ocean was unexplored; it was therefore supposed that the coast trended away to the west, and continued that course until the southern ocean ultimately united itself with the western, and the regions at the back of Ethiopia and Libya.[9] This was evidently the mere application to the more distant latitudes with which they had become acquainted, of the previously received theory adopted by Eratosthenes and Strabo concerning the deflection of the African coast to the westward. But it serves to show how strongly rooted was the belief in men's minds, before the time of Ptolemy, that the whole African continent was surrounded by the ocean; and that its circumnavigation was therefore possible.

§ 9. The Periplus now returns to the point from whence it started, and begins again from Berenice to describe the "left hand," that is to say, the east coast of the Arabian Gulf or Red Sea. Here the first point noticed is Leuce Come, which had continued ever since the time of Augustus to be one of the principal ports on the Arabian coast. Its site at Howara in 25° lat. has been already indicated:[1] it was thus nearly opposite to Berenice, and was the seat of a considerable trade with the Nabatæan Arabs, whose capital was in the interior at

[8] We shall hereafter see that Ptolemy's knowledge of this coast really extended a very little way beyond that of the *Periplus*.

[9] *Periplus*, § 18.

[1] See Chapter XX. p. 181.

Petra. From hence for a long distance the Arabian coast was extremely dangerous, from the multitude of rocks and shoals, and the absence of ports and good places of anchorage, as well as the barbarous character of the inhabitants, who plundered and made slaves of all mariners who were unfortunate enough to be wrecked upon their shores. For this reason navigators bound for Muza and the ports outside the Straits shunned as much as possible the Arabian side of the Gulf, and held a direct course through the middle of the Red Sea as far as an island called the Burnt Island, which may be identified with the volcanic islet called Jebel Zebair in 15° of latitude. From thence the voyage to Muza appears to have presented no difficulties, and the inhabitants of the neighbouring mainland were comparatively civilized.

Muza was the chief emporium of trade for all this part of Arabia, and the residence of merchants who not only had extensive commercial relations with the opposite ports on the coast of Africa, from the straits to the extremity of Barbaria, and even as far as Rhapta, but used to send ships of their own to Barygaza in India.[2] It was the more remarkable that Muza had acquired so prominent a position as an emporium, as it had no regular port but merely a roadstead, with good anchorage on a sandy shore. The best time of year for the voyage thither was the month of September, the Egyptian Thoth.[3]

Three days inland from Muza was the city of Save, the capital of the Mapharitic territory, and the residence of their king Cholœbus. Nine days farther in the interior was the metro-

[2] *Periplus*, § 21.

[3] It is perplexing that the author of the *Periplus*, whose statements as to distances are generally very correct, describes Muza as distant from Berenice 12,000 stadia, "sailing due south" (*παρ' αὐτὸν τὸν νότον πλεόντων*, § 21). These words would appear to point to ships holding a direct course down the middle of the Red Sea, as he has just described them as doing from Leuce Come. But the direct distance from Berenice by such a course does not exceed 800 G. miles or 8000 stadia, and even if we include the *détour* by Leuce Come, which is certainly opposed to the natural meaning of our author's words, it does not amount to more than about 9500 stadia. But Pliny, as we have seen, reckoned it 30 days' voyage from Berenice to the mouth of the Straits (Plin. vi. 23, § 104), which according to the ordinary computation would give not less than 15,000 stadia, which is just in accordance with the *Periplus*.

polis of Sapphar, the capital of Charibaël, who was established as king of the two adjoining nations, the Homeritæ and the Sabæans.[4] The important position he thus occupied had led to his friendship being diligently cultivated by the Roman emperors, who had sent him repeated embassies and presents. Even merchants brought vessels of embossed silver and gold, embroidered garments and bronze articles of furniture, as presents to the king and his deputy. All this points to a considerable amount of civilization as subsisting in this part of Arabia.

§ 10. About 300 stadia from the port of Muza and close to the narrowest part of the Straits, where the opposite shores of Arabia and Africa approach within 60 stadia of one another, was the port of Ocelis, which was not so much a place of trade, as a halting-place, having good anchorage and water, for navigators touching there on their voyage to India.[5] But about 1200 stadia farther, where the sea had opened itself out again into a wide expanse, was a place called Arabia Eudæmon, having both a better port and larger supply of water, and in all respects preferable as a station to Ocelis. This had formerly been a city and a flourishing place, when navigators did not yet venture on the long voyage from Egypt to India or the reverse, and this port had served as a place for the mutual interchange of their commodities.[6] But it had been reduced to ruin not long before the time of the Periplus, and was now

[4] *Periplus*, §§ 22, 23. These particulars coincide precisely with those given by Pliny; and indeed it is this agreement which has been relied on as one of the main arguments in proof of the *Periplus* now extant having been the authority used by him; but the facts stated are such as must have been well known to all traders to Muza, and their agreement proves nothing beyond the accuracy of both authorities. The site of Sapphar, the capital of all this district, which is mentioned by the Arabic geographers under the name of Dhafar, seems to be clearly established near Jerim, about 100 miles N.E. of Mocha on the road to Sana, where its ruins still exist (Niebuhr, *Description de l'Arabie*, p. 206. C. Müller, *not. ad Peripl.* § 23).

[5] *Periplus*, § 25.

[6] *Periplus*, § 26. This passage is important, as proving that the trade with India had long been carried on in this manner, before Greek voyagers ventured to undertake the more distant navigation to that country. It is probable, as has been already shown, that this was still the case in the time of the Ptolemies.

not more than a village.[7] It was comprised within the kingdom of Charibaël. There is no doubt that the port thus designated was the well-known station of Aden, now so familiar to all Englishmen from its connexion with the direct voyages to India, but which little more than 30 years ago was described in terms very similar to those of the Periplus, as once a populous town, but then a ruined village of only 600 inhabitants.[8]

Beyond this was a barren and sandy coast, inhabited only by wandering tribes and fishermen (Ichthyophagi), for more than 2000 stadia, as far as a place called Cane, belonging to the dominions of another monarch, named Eleazar, whose capital was in the interior, and bore the name of Sabbatha. This was in the very centre of the frankincense-bearing country and the chief place of its export, in consequence of which Cane had risen to be an important emporium, and was able, like Muza, to carry on trade on its own account, and in its own ships, with the opposite coasts of Africa and the northern ports of India.[9] The site of Cane can be clearly fixed at a place called Hisn Ghorab, with a remarkable rock fortress, and the ruins of a considerable town beneath.[1] It is singular that the Periplus does not mention the name of the tribe or nation of which Eleazar was king, though there can be no doubt that they were the same known to the Greeks from Eratosthenes to Ptolemy as the Chatramotitæ, whose territory was always regarded as *par excellence* the land of frankincense. The site of his capital has not been determined, the interior of Hadramaut being still almost unknown.

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[7] See Note A, p. 478.

[8] Captain Haines in *Journal of Geogr. Soc.* vol. ix. p. 133. See also the extract from his MS. journal, given by Mr. Forster in a note to his *Geography of Arabia*, vol. ii. p. 159.

[9] *Periplus*, §§ 27, 28. It is on this occasion that we find *tin* mentioned among the articles of commerce imported into Cane, but in a manner that clearly implies that it came, not from India, but like the bronze, coral, and other European articles, from Alexandria.

[1] Haines, *l. c.* p. 145. Capt. Haines adds that its position would point it out as a sea-port of some consequence. At the present day the trade is wholly transferred to Makallah, about 60 miles further east, which is now become the chief port of Hadramaut.

§ 11. After Cane followed a very deep gulf, to which our author gives the name of Sachalites, extending for a long space, and bounded at its eastern extremity by the promontory of Syagrus, facing towards the east, which is termed "the greatest headland in the world."[2] What gave rise to this notion it is impossible to say, but the promontory in question is undoubtedly the same with the modern Cape Fartak, which is described as "a lofty mountain about 2500 feet high, forming a very prominent cape, which may be seen by the navigator 60 miles off on a clear day."[3] Its chief importance in the eyes of Greek navigators in the days we are considering was however derived from its being the point of departure from which ships bound direct for India struck out into the open sea.[4]

Opposite to Cape Syagrus, in the open sea between that headland and Cape Aromata on the coast of Africa, but rather nearer to Arabia, was the Island of Dioscorides, of large size and fertile, but inhabited only by a few settlers — Arabs, Indians, and Greeks—who had established themselves there for commercial purposes.—It produced abundance of tortoise shell of excellent quality, as well as Indian cinnabar, a term applied to a kind of gum, now known as dragon's blood, which is still found there in great abundance.[5] The island was subject to the king of the frankincense country (Hadramaut), and was farmed out by him in the same manner as Azania was by Charibaël.[6]

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[2] *Periplus*, § 30.

[3] Haines, in *Journal of Geogr. Soc.* vol. xv. p. 115. This identification was first made by Dr. Vincent, who justly regards it as the main point in respect to the geography of the whole of this coast, vol. ii. pp. 331–340. D'Anville had previously supposed the ancient Syagrus to be Ras el Hadd, more than 600 miles E. of Cape Fartak, and had thus thrown the whole subject into confusion.

[4] This is distinctly stated by Pliny in the passage already cited (vi. 23, § 100). Wellsted, speaking of the Arabian trade to India in his day says: "Departing from the Arabian ports in September, the larger class of vessels proceed to the eastward as far as Ras Fartak, the smaller to Ras el Hadd; from thence they strike across and make the coast of India about Poorbunder on the coast of Guzerat." (*Travels in Arabia*, vol. ii. p. 437.)

[5] See Wellsted's *Memoir on the Island of Socotra*, in the *Journal of Geogr. Soc.* vol. v. p. 198.

[6] *Periplus*, § 31. It was probably this political relation that induced our author, as well as Pliny, to connect the

But though this important headland on the coast of Arabia can be identified without difficulty, the rest of our author's description of that part of the coast is confused and in some points apparently erroneous. The name of Sachalites which he has applied to the coast *west* of Cape Syagrus, is given by Ptolemy to the bay *east* of that headland,[7] which certainly answers much better to our author's expression of "a very deep gulf," there being hardly anything worthy of the name of a gulf or bay between the site of Cane and Cape Fartak. Moreover, our author himself speaks of Moscha, a port which he places considerably to the east of Cape Syagrus, as the emporium in which the Sachalitic frankincense was deposited, in a manner that certainly leads to the inference that it was in the centre of the Sachalitic district. It is singular also that we find him applying the name of Omana to a portion of this coast, though separated by a wide interval from the modern province of Oman. The port of Moscha, which appears to have been a place of considerable trade, must probably have been situated in the district now known as Dhafar, a little to the west of the modern town of Morbat.[8] Immediately beyond this rises a lofty range of mountains called Subhan, which precisely answers to the mountain mentioned in the Periplus as extending as far as a place called Asik.[9] Opposite to the extremity of this were seven small islands called the Zenobian islands, corresponding to the group now known as Curia Muria, and about 2000 stadia farther was the much larger island of Sarapis (the modern Moseïrah) which, like the island of Dioscorides,

island with Arabia rather than Africa. At the present day it is subject in like manner to the Sheikh of Keshin, near Cape Fartak in Arabia. See Wellsted, *l.c.*

[7] The same error (if such it can be termed) was committed also by Marinus of Tyre, for which he is expressly censured by Ptolemy (i. 17, § 2).

[8] Dr. C. Müller goes so far as to suppose that the names of Omana and Moscha have been erroneously transferred hither, and that they really belong to a later part of the *Periplus*, where it was describing the coast of Oman, Moscha being really the modern Muscat. This suggestion appears to me unnecessary and improbable. Ptolemy has also a port of the name of Moscha in this part of Arabia, though he places it *west* of Cape Syagrus (Ptol. vi. 7, § 10).

[9] *Periplus*, § 33. See Haines, *l. c.* pp. 117, 127.

produced abundance of excellent tortoise shell, and was frequented for that object by merchants from Cane.[1]

§ 12. His information concerning these islands is perfectly clear and consistent with our modern knowledge of the coast; but with the shores of the main land itself he seems to have been imperfectly acquainted, and his account of the coast line from this point to the mouth of the Indus is one of the least satisfactory portions of his work. This part of Arabia according to his statement, was subject to the Persian (that is, to the Parthian) monarchy, but was inhabited by barbarians: and it is remarkable that he does not mention any emporium or place of trade on the continent, between Moscha and the entrance of the Persian Gulf. It would appear that it was the habit of navigators to keep well out to sea as far as the island of Moseïrah, and thence round the headlands of Arabia to the entrance of the Gulf, touching only at the small islands, which he calls the islands of Calæus, and thence making direct for the Straits.[2] But the omission in this part of his course of all mention of such remarkable headlands as Cape Isolette (Ras Jezireh) and Ras el Hadd (the Corodamum of Ptolemy), presents a striking contrast to the accuracy of detail with which he has described the part of the coast further west; and leads to a suspicion that this portion of the Periplus, like that of Azania, is not derived from personal experience.

He however describes very correctly the Straits at the entrance of the Persian Gulf, between the lofty and rugged mountain range called Asabon, which forms the remarkable promontory now known as Cape Mussendoon,[3] on the one hand, and a high round mountain, which bore the name of

[1] *Periplus*, § 33.

[2] Ibid. § 34.

[3] Ibid. § 35. Ptolemy also calls both the promontory itself, and the range of black, rugged mountains, which constitute it, by the name of Ἀσαβῶν ἄκρον, and Ἀσαβά ὄρη (vi. 7, §§ 12, 20). It is the same headland described by Nearchus, and after him by Eratosthenes and Strabo, as that of Maceta, or of the Macæ (Strabo, xvi. 3, p. 765). In the modern appellation we can still distinctly trace that used by Ptolemy and the *Periplus*.

The mountain of Semiramis in Carmania is also noticed by Ptolemy (vi. 8, § 11).

Mount Semiramis, on the other. The Strait between the two, he tells us, was about 600 stadia in length, after which the broad and spacious Persian Gulf spread far into the interior. The established port in his day at the head of this gulf was one which he calls the city of Apologus, which had apparently succeeded to the position previously occupied by Teredon. He describes it as lying over against the Euphrates and the city of Charax Spasini.[4]

§ 13. Returning to the entrance of the Gulf and continuing his course eastward, he tells us that after six days' voyage was an important emporium called Omana, in the hands of the Persians, which carried on an extensive trade with Barygaza on the one hand, and with Cane and the other Arabian ports on the other. Among the Indian articles imported are mentioned sandal-wood[5] and ebony, and among those exported from thence were pearls from the Persian Gulf, which were found there in great abundance, but inferior in quality to those from India. The site of Omana cannot be determined with certainty: but it may perhaps be placed in the bay of Choubar, about 60 G. miles west of Gwadur on the coast of Beloochistan. Thus far the country was subject to the Persians: beyond this it was possessed by independent tribes, each having its own ruler, among whom the Parsides and Oritæ are somewhat obscurely indicated: and beyond these again, where the coast began to bend round from the east, was the sea-coast of Scythia, a land extending far up to the north.[6]

The mention of Scythia here undoubtedly refers to the country which is more distinctly characterized by Ptolemy as Indo-Scythia, and which comprised the whole region adjoining the lower course of the Indus, now known as Sinde, together with Cutch and Guzerat. The name was evidently given to it

[4] *Periplus*, § 35. The mention of Charax in this connexion confirms what we gather from Pliny that it was at this time the principal emporium of trade at the head of the Persian Gulf.

[5] ξύλα σανδάλινα, for which the MSS. have σαγγάλινα (§ 36). This is the first notice of this celebrated production of India, which is not mentioned by Pliny.

[6] *Periplus*, §§ 37, 38.

in consequence of its having been overrun and reduced to subjection by the Scythian tribes, who after having destroyed the Greek dominion in Bactria had carried their arms across the Hindoo Koosh, and subdued all the territories previously subject to Greek rulers, extending down the valley of the Indus to the sea.[7] These Scythians had indeed been expelled before the time of the Periplus, and the country was at this time subject to the Parthian king,[8] but the name might naturally remain long after; as we find to be still the case in the days of Ptolemy.

§ 14. In this region were the mouths of the great river Indus, or as the author more correctly writes the name, Sinthus,[9] which he calls the greatest of all the rivers that flowed into the Erythræan Sea, and that which discharges the greatest volume of water. The coast adjoining them was extremely low, so that long before it was seen, the approach to land was observed by the discolouration of the water, as well as by the appearance of serpents floating in the sea.[1] The Indus had seven mouths in all, but the middle one only was navigable, on which was situated the emporium of Barbarice, where merchant ships rode at anchor, but their wares were all carried up the river to the metropolis of Scythia, a city called Minnagara, which must have been the *entrepôt* of an extensive inland trade, as among the goods exported from thence are mentioned Seric textures (silk), as well as furs from the same

[7] The history of these conquests is very imperfectly known; but it appears to have been under two Greek princes of the names of Apollodotus and Menander, that the Macedonian arms had been for the second time carried down the valley of the Indus (Strabo, xi. 11, § 1; Trogus Pompeius, prol. xli.); but their date is quite uncertain. Strabo, in the passage just cited, associates Menander with Demetrius, son of Euthydemus, king of Bactria, who is known to us from Polybius (xi. 34), and says that *they* extended their conquests over the Pattalene (the Delta of the Indus) and some neighbouring provinces. But it does not follow that they were contemporary. The Scythian conquest may probably be assigned to about B.C. 120.

[8] *Periplus*, § 38.

[9] There is no doubt that this is the more correct form. Pliny tells us that its native name was Sindus (Indus, incolis Sindus appellatus, vi. 20, § 71); and in Sanscrit it is written Sindhu.

[1] Strange as this statement appears, its correctness is confirmed by the testimony of many writers, in mediæval and modern times. See the authorities quoted by Dr. Vincent (vol. ii. p. 391), and by C. Müller (*not. ad loc.*).

country.[2] Among the Indian products are noticed sapphires, and indigo, which appears to have been already known as a pigment and dye.[3] Our author adds a notice of the proper season for sailing to the mouths of the Indus, which is unfortunately corrupt, but evidently seems to have referred to the habit of some navigators of making direct for that point, instead of following the coast; which as he observes was a more perilous course, though shorter.[4]

Beyond the mouth of the Indus was a deep bay, which had never been explored, but was extremely dangerous on account of whirlpools, rapid currents and sandy shoals, on which ships would be left aground, while still out of sight of land. It was called Eirinon, and was divided into two, a lesser and a greater gulf of the name. This inlet was protected by a promontory curving round to the west, and enclosing another gulf called Barace, with seven small islands, which was also very dangerous, and required to be carefully shunned by navigators: the approach to it was recognized by the appearance of large black serpents in the sea, while those seen on the coast from thence to Barygaza were smaller, and of a green or golden colour.[5]

There can be no doubt that we have here a correct description of the country, though somewhat obscurely stated. There can be no difficulty in identifying the Gulf of Barace with that now called the Gulf of Cutch, and it is probable that the one—or rather two—to which the author applies the name of Eirinon, correspond to the singular tract called the Runn of Cutch, which may in his time have been sufficiently depressed

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[2] *Σηρικὰ δέρματα*, § 39. This can hardly refer to anything else but furs, which might well be brought overland, with silk goods, from the lofty regions of Central Asia beyond the sources of the Indus.

[3] *Ἰνδικὸν μέλαν, ibid.* This has been erroneously supposed by some writers to refer to Indian ink! But there can be no doubt that indigo is meant, which is noticed as a dye by Dioscorides (*de mat. med.* v. 107) under the name of *Ἰνδικὸν*, and by Pliny as an expensive pigment, which he calls "Indicum" (xxxv. s. 27, § 46).

[4] See Müller's note on § 39 of the *Periplus*. The exact words cannot be restored, but the general sense seems to be clearly that indicated in the text.

[5] *Periplus*, § 40.

to be flooded by the sea at high tides. But the natural difficulties it must always have presented to navigation would well account for its being still unexplored.[6]

§ 15. After the gulf of Barace follows another bay, deriving its name from Barygaza, the great emporium connected with it. The mainland here belonged to the province called Ariace, which was the beginning of the kingdom of Mambarus, and of the whole of India.[7] The inland portion of Ariace, which adjoined the Scythian territory, was called Aberia, the coast district Syrastrene. This last may be clearly identified with the peninsula of Guzerat. It lay on the left hand as the voyager proceeded towards Barygaza, and ships destined for that port appear to have kept close to the western shore as far as a promontory called Papice, from whence they struck across the gulf direct to the mouth of the river, on which Barygaza was situated, leaving on the left a small island called Bæones, so as to be just visible.[8] Barygaza itself was situated 300 stadia from the mouth of the river,[9] to which our author gives the name of Namnadius: it is the Namadus of Ptolemy, and the modern Nerbuddah.[1] Another great river fell into the head of the same gulf, which he calls the Maïs, a name still preserved in the modern Mhye or Mahi. The

[6] See the description of this curious tract of country by Sir Bartle Frere in the *Journal of Geographical Society*, vol. xl. pp. 181–207, and of the earthquakes and consequent changes of level to which it is subject in Sir C. Lyell's *Principles of Geology*, vol. ii. pp. 97–104 (10th edition).

[7] *Periplus*, § 41. ἡ ἤπειρος τῆς Ἀριακῆς χώρας, τῆς Μαμβάρου βασιλείας ἀρχὴ καὶ τῆς ὅλης Ἰνδικῆς οὖσα. The name of India is evidently used here as opposed to Scythia or Indo-Scythia; but it is curious to find the valley of the Indus, so long the country specially known to the Greeks as India, here actually distinguished from it.

[8] τοῦτον τὸν κόλπον οἱ πλέοντες εἰς Βαρύγαζα διαπερῶνται, ἐξ εὐωνύμων ἀκροφανῆ καταλιπόντες τὴν νῆσον, § 42. The preciseness of this direction leaves no doubt that the island here meant (the name of which had been before mentioned) is the small island of Perim in the Gulf of Cambay, almost directly opposite to the mouth of the Nerbuddah. This renders it probable that the promontory of Papice was that of Gopenat, on the opposite side of the gulf, near its entrance, rather than Cape Diu, with which it is identified by Dr. Vincent, which is too far from the entrance of the gulf. But the distance of 3000 stadia from the mouth of the Indus at Barbarice would correspond better with Cape Diu.

[9] *Periplus*, § 44.

[1] The native name even at the present day is Narmada.

whole of his description of these regions, so peculiar in their conformation, is very accurate, and his sailing directions so precise, as to leave no doubt of their being the result of personal experience.

Barygaza, as we have already seen by the frequent references to it in the earlier parts of this treatise, was the great emporium of trade for all this part of India; much as Surat became in the early days of the English trade, and Bombay is at the present day. It exported not only Indian goods from the interior, including the fine muslins for which the country has always been celebrated, but silks from China, which had been brought by overland carriage, onyxes and other precious stones, nard and other perfumes, and ivory.[2] The principal of these goods were brought down from Ozene, a city of the interior, which had been formerly the capital of the kingdom of Ariacè. This had been of late years transferred to a city called Minnagara, which appears to have been situated also not far from the river Nerbuddah,[3] but at a considerable distance up the river.

§ 16. The author of the Periplus gives us in this place a very interesting and characteristic account of the remarkable phenomena produced by the tides in this part of India, especially the rush of the tidal wave up the rivers, known as the "bore." This description has every character of being the result of personal observation.[4] On the other hand his few and brief notices of the nations in the interior, to the north of Ariace, are very confused and imperfect, and are evidently mere hearsay reports, imperfectly understood.[5] Of the same character is his statement that Alexander had carried his arms through India to the Ganges; but one circumstance which he mentions is curious, and must have been derived from his own experience, that Greek drachms of Apollodotus and Menander, two of the Greek kings of Bactria who had extended their

[2] *Periplus*, § 49.
[3] See Note B, p. 478.
[4] Ibid. §§ 45, 46.
[5] Ibid. § 47.

dominion down the valley of the Indus, before the Scythian invasion, were still found current in the markets of Barygaza.[6]

§ 17. Proceeding onward from Barygaza our author makes the important remark that the coast of India thenceforth extends from north to south, an observation which shows him to have had a clearer idea of the true configuration of the country than any previous geographer; while, as we shall hereafter see, Ptolemy, though writing half a century later, fell into still more unaccountable error upon the same point. To this southern region in general he gives the name of Dachinabades, in which we clearly recognize the same word as is preserved in the modern Dekkan. He adds that its name signified "the southern land," and that the interior contained many desert regions, high mountains, and forests abounding in wild beasts, including panthers, tigers, elephants, and serpents of marvellous size: but was inhabited also by numerous and populous nations, extending all the way to the Ganges.[7] Imperfect as it is, this brief notice is interesting as the first we possess of Central India, or of any part of the peninsula of Hindostan.

§ 18. Of the emporia or cities of the interior he mentions only two, which he names Pæthana and Tagara. Both names are found again in Ptolemy, but their site cannot be determined with any approach to certainty. Along the coast on the contrary he enumerates many names of ports extending along from Barygaza to the confines of Limyrice, which adjoined Ariace on the south. Most of these names are obscure and otherwise unknown: the only two that deserve

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[6] *Periplus*, § 47. Concerning these Greek rulers, see above, p. 462. According to Professor Wilson (*Ariana*, p. 292) the reign of Menander may be placed about B.C. 126; while General Cunningham would assign him to a period as early as 160–140 B.C. Apollodotus is supposed by Wilson and Raoul Rochette to be his son; but General Cunningham places him earlier, and regards him as the son of Eucratides. The chronology of these Græco-Bactrian princes is still wholly uncertain. But the coins in question must at all events have belonged to a period 200 years before that when our author wrote. They are still found in large numbers in the regions adjoining the valley of the Indus.

[7] *Periplus*, § 50.

attention are Calliena, which had formerly been an important emporium, but had lost that character in the days of our author: and Melizigara, which is probably the same with the Sigerus of Pliny.[8] The former is doubtless a place still called Calliana, on the mainland nearly opposite to the island of Salsette: the second may be placed about two degrees farther south, at or near the modern Viziagour.[9] But all these were small places, and there appears to have been no considerable emporium of trade along this coast as far as the confines of Limyrice, a distance of not less than 7000 stadia.[1]

§ 19. The territory of Limyrice was subject to an independent sovereign of its own, who resided in the interior, and whom our author calls Ceprobotras, evidently the same name with the Cœlebothras or Celobothras of Pliny.[2] The first ports in this district were Naoura and Tyndis, and beyond these to the south Muziris and Nelkynda, which were become the chief places of trade at the time our author wrote.[3] Nelkynda however was not properly speaking included in Limyrice, but was subject to another king named Pandion, whose dominions appear to have comprised the whole southern extremity of the peninsula of India. The writer of the Periplus tells us that it was 500 stadia from Tyndis to Muziris, and again 500 stadia from thence to Nelkynda.[4]

Nelkynda was situated on a river, about 120 stadia from the sea, and there was another port at its mouth, which was called Bacare: evidently the same with the Barace of Pliny, which he places in the territory of the Neacyndi, probably also a false reading for Nelcyndi. It is clear therefore that the ports

[8] Suppara also, which he mentions before Calliena (§ 52), has been recently identified with a place still called Supàrà on the coast directly north of Salsette.

[9] See Vincent, vol. ii. pp. 430, 431. C. Müller in his notes on the *Periplus*, §§ 52, 53.

[1] *Periplus*, § 51. The incidental mention of pirates (§ 53), which is confirmed by Pliny (*H. N.* vi. 23, § 101), probably indicates one reason why this part of the coast was little frequented by traders.

[2] Plin. ibid. § 105.

[3] *Periplus*, §§ 53, 54. The author's expression that the last two ports are "those which now do business" (*αἱ νῦν πράσσουσαι*) is a curious instance of the homely simplicity of his style.

[4] Ibid. § 54.

referred to by both authors are the same: but there is much difficulty in determining their precise position on the western coast of India. Nelkynda was placed by Major Rennell at a place called Nelisseram, at the head of an estuary, the mouth of which is a few miles to the north of Mount Delli, in latitude 12° 10′: and this identification was adopted by Dr. Vincent, as well as by the most recent editor of the Periplus.[5] In accordance with this view Muziris was placed at Mangalore, Tyndis probably at Cundapoor, and Naoura at Honauer in 14° 16′, at the opening of a considerable estuary formed by the river Sherramutter. But the most recent writer who has investigated the subject, Colonel Yule, has transferred the whole group of ports, and with them of course the district called Limyrice, nearly three degrees farther south:[6] identifying Muziris with Cranganore, which was a port much frequented in the middle ages, though now decayed, situated in about 10° 12′ N. latitude. This change has the advantage of being in accordance with the 7000 stadia given as the distance from Barygaza to Limyrice—an estimate greatly in excess of the truth, if that district be supposed to coincide with the modern Canara: and of affording an explanation of some expressions very obscurely worded in the description of the coast from Tyndis to Muziris and Nelkynda. But on the other hand no site can be found on this part of the coast that corresponds nearly as well with the description of Nelkynda and its port of Bacare as that selected by Major Rennell. The difficulties attending the identification of the ports in question are certainly not altogether surmounted by either theory.

§ 20. The author gives as usual a full enumeration of the imports and exports of these two important ports, which were apparently the same at both.[7] But pepper, which was the

[5] Rennell, *Memoir of a Map of India*, p. 28. Vincent's *Commerce and Navigation of the Ancients*, vol. ii. p. 445; C. Müller, *not. ad Peripl.* § 54.

[6] See his remarks in the Introd. prefixed to the *Atlas of Classical Geography* by Dr. Smith and Mr. Grove, p. 23.

[7] Hence he afterwards repeatedly refers to them as the ports of Limyrice, though, strictly speaking, Nelkynda, being subject to king Pandion, was not included in Limyrice.

chief article in request, and the great object of attraction to the Greek and Roman merchants, was produced only in a district named Cottonarice, from whence it was transmitted to the seaports. This district, mentioned under the same name by Pliny, cannot be more clearly identified, but was apparently in the interior, adjoining the coast of Malabar near Calicut and Cochin. The pepper produced in this region enjoys at the present day the reputation of being the best in India. Besides pepper, the exports of Nelkynda included various kinds of precious stones, pearls of fine quality, and abundance of tortoise shell, some of which was brought from the island of Chryse, some from the smaller islands opposite to Limyrice.[8] These can be no other than the Laccadive Islands, which even at the present day are noted for producing the finest tortoise shell.

It is curious to observe at this early period the trade with India taking the same course, and concentrating itself at nearly the same points as it did in much later times. Thus Barygaza and Nelkynda had become the two chief emporia of trade in the time of the Periplus, just as it centered at Surat and at Calicut after the Portuguese first came to India; and in the early days of the British trade with India, their chief factories were established at Surat and Tellicherry, the latter corresponding to Nelkynda as Surat did to Baroach.[9]

§ 21. Having thus reached the farthest point which was habitually visited by Greek merchants in his day, the author of the Periplus returns to point out the course pursued by navigators, in a passage which is rendered doubly interesting

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[8] *Periplus*, § 56. Among the imports or goods carried to this port, as well as to Barygaza, are enumerated bronze, *tin*, and lead. It is evident, therefore, that tin was not produced in India, but had to be carried thither by Alexandrian or Greek traders. Coral also is an article of frequent recurrence among the imports; thus confirming the statement of Pliny that the coral of the Mediterranean was in as much request among the Indians as the Indian pearls among the Romans (*H. N.* xxxii. s. 11, §§ 21, 23).

[9] See Vincent, vol. ii. p. 464. He says "at Surat they obtained muslins, chintz, and cottons; at Tellicherry, pepper and cardamoms." The latter spice, though known to Theophrastus, is not mentioned by our author.

from our having the opportunity of comparing it with that already cited from Pliny. "The whole of this circumnavigation from Canè and Arabia Eudæmon (he tells us) was formerly performed in small vessels, which followed the windings of the coast: a pilot named Hippalus was the first, who, from observing the position of the ports, and the configuration of the sea, discovered the mode of sailing right across the open sea; from whom the name of Hippalus is given to the local wind which blows steadily from the south-west, in the Indian seas, at the same period as the Etesian winds prevail with us. From his time till the present day some navigators make their course direct from Canè, others from the promontory of Aromata, and if they are going to Limyrice have to struggle longer, but those that make for Barygaza and Scythia, only contend with the wind for about three days, and thenceforward have a favourable wind for their course across the open sea, keeping aloof from the land while they pass by the gulfs that have been described." [1]

Though this passage is not very clearly expressed, by comparing and combining it with that of Pliny, we may arrive at a distinct notion of the course adopted, and the progress of navigation from the first discovery of Hippalus. That navigator appears to have been the first to remark that by taking advantage of the south-west monsoon, which blows steadily for several months together from the same quarter, it was possible to hold an uniform course, with a fair wind, from the Arabian promontory of Syagrus (Cape Fartak), direct to the mouths of the Indus (or what was called Indo-Scythia), thus avoiding all the windings of the coast at the entrance of the Persian Gulf. But when once it was found how much was gained by this process, and how the steadiness of the monsoon wind (now

[1] *Periplus*, § 57. The text of this passage is unfortunately in several places corrupt, and it is not always easy to say what the author meant, though there can be no doubt of the general sense. But the expression τραχηλίζοντες, which he uses with regard to the ships bound for the several ports, is very obscure; and I feel by no means sure that I have correctly rendered its meaning. The translation by Dr. Vincent is nonsense.

called Hippalus in honour of that navigator) could be relied on, they began to stand across still more directly to India; ships bound for Barygaza making for the entrance of the gulf of that name, so as to avoid the dangerous vicinity of the Gulf of Cutch; and others first touching the mainland at Sigerus, south of Bombay. Ultimately it was found possible to steer direct for the ports of Muziris and Nelkynda, still farther south, which were the emporia that presented the greatest attractions, and furnished the largest amount of Indian goods. For this reason Pliny speaks of them as if they had superseded all others, but we learn from our Periplus that Barygaza still carried on a very extensive trade, and was the point to which many Greek and Egyptian merchants still made their voyages. Those who followed this direction would naturally have the wind almost perfectly fair, from the time they quitted the Arabian or African coast, while those bound for the ports of Limyrice, Muziris, and Nelkynda, on the coast of Malabar, would have to hold their course nearly due east—these two ports being very much in the same latitude as Cape Aromata and the entrance of the Gulf of Aden.[2] But though they would thus not have a wind directly fair, it would still be easy to hold their course, with the wind steadily on their beam. We learn from our author that the ships which traded direct to Nelkynda were of the largest size; and from Pliny that they were able to make the passage across the Indian Ocean, from Ocelis to Muziris, in forty days.[3] The length of this voyage, being not less than 1800 geographical miles, if reckoned from Ocelis, and at least 1300 after leaving Cape Fartak, greatly exceeds what the ancient navigators were accustomed to accomplish at one stretch, and it was only the peculiar character of the winds which prevail in these seas

[2] The town of Aden and the entrance of the Straits of Bab el Mandeb are almost precisely in the same latitude with Mangalore on the W. coast of India. (lat. 13° N.) If the ports of Muziris and Melkynda are to be transferred to the coast of Malabar, S. of Calicut, (as suggested by Colonel Yule) they would be about 3° further south. But in so long a course this would make no great difference in the bearing.

[3] Plin. *H. N.* vi. 23, § 104.

that enabled them to effect it.[4] Hence the credit was deservedly given to the first bold navigator who had the courage and sagacity to take advantage of these favouring circumstances. It is remarkable that our author, though evidently writing for practical men, makes no mention of the return voyage, for which the north-east monsoon offered the same facilities during four months of the year, that the south-west had supplied for the outward voyage.[5]

§ 22. It is evident that Nelkynda was the farthest point that was habitually visited by Greek merchants in the days of our author, and though he proceeds to describe the coast from thence to Taprobane, and even round the peninsula to the mouth of the Ganges, one cannot fail to discern that his information was of quite a different character. This last portion of his little work indeed is manifestly the result of mere hearsay, and that of a very imperfect description, being probably derived from native traders, who either had themselves but indistinct notions of the geographical relations of the countries they had visited, or failed in conveying any clear idea to our informant. The clear and satisfactory character of the account he has given of the western coasts of India, from the mouths of the Indus down to Nelkynda and Barace, renders the contrast all the more striking when we attempt to follow his statements further on. We here find indeed some glimmerings of light concerning countries that were unknown to all previous writers, and which prepare us in some degree for the much more extensive information that we

[4] At the same time the rate of progress is unaccountably slow, for a voyage under these favourable circumstances. We have seen that ancient writers generally allow 500 stadia or 50 G. miles for a day's sail; while here the amount would little exceed 45 G. miles; but the voyage being in this instance continuous and uniform must have occupied forty *nights* as well as days, and the distance accomplished ought therefore to have been double that amount. Pliny, however (*l. c.*), reckoned it thirty days' voyage from Berenice to the Straits of Bab el Mandeb, which would imply a still slower rate of sailing, as the distance does not exceed 800 G. miles. (See note to p. 455.)

[5] See the passage cited from Pliny in Chapter XXIV. p. 419.

find in Ptolemy about half a century later: but all is as yet vague and indistinct, and it is very difficult to determine what were the ideas which our author himself conceived of the geography of these countries.[6]

Thus in the first place he continues to follow the coast of India, which he terms the Paralia—apparently so called as being the coast border of the kingdom of Pandion[7]—as far as a place called Comar or Comari, in which there is little doubt that we may recognise the great southern promontory of India, Cape Comorin.[8] But instead of regarding it as what it really is, the southern termination of the continent, he describes the coast as still holding a direction from north to south, as far as a place called Colchi,[9] which was the site of the great pearl fishery, and was still subject to the king Pandion. There can be no doubt that the pearl fishery was really carried on in his days, as it always has been,[1] to the east of Cape Comorin, just opposite to the coast of Ceylon, where a string of islands and shoals extend almost across from that great island to the mainland; and it is evidently one of these islands—either Manaar or Ramisseram—that he designates under the name of the isle of Epiodorus. Beyond the gulf of Colchi he places another gulf with a low shore, deriving its name from a place in the interior called Argalus, celebrated for a manufacture of stuffs ornamented with small seed pearls. The ports in this neighbourhood were frequented—doubtless on account of the pearls—by traders from all parts of India, and not only carried on

[6] See the remarks of Dr. Vincent.

[7] Colonel Yule, however (p. 23), considers the Greek name of Paralia to be a corruption of the Indian name of Purale, an old appellation of the region now known as Travancoré.

[8] It is termed Comaria by Ptolemy (vii. 1, § 9), who describes it as a promontory and city (Κομαρία ἄκρον καὶ πόλις).

[9] This name is probably the same with that of the Coliaci, whom we find placed in this neighbourhood by earlier authors (Strabo writes the name Coniaci). Ptolemy, however, like the Periplus, has a "gulf of Colchi," in which the diving for pearls is carried on (κόλπος Κολχικός, ἐν ᾧ κολύμβησις πινικοῦ, vii. 1, § 10), with an emporium called Colchi; but these he correctly places to the north as well as to the east of the Comarian promontory (Cape Comorin).

[1] On this subject see the authorities collected by Dr. Vincent, vol. ii. pp. 489, 490, and Tennent's *Ceylon*, vol. ii. p. 561.

a coasting trade with the ports of Limyrice, but sent ships of large size across the gulf to Chryse and the Ganges.[2]

The two gulfs here mentioned in connection with the pearl fishery may be fairly identified with those on the two sides of the chain of islands already noticed; the easternmost, the gulf of Argalus, corresponding with that now called Palk Bay, and extending as far as Point Calymere, nearly opposite the northernmost point of Ceylon. But his conception of the geographical position of these countries was altogether erroneous. He evidently considered, in accordance with the received view of all Greek geographers, that Ceylon lay altogether to the south of India, and in order to make it so, was compelled to bring these ports and bays which he knew to be opposite to that island, quite out of their true position. He thus regarded the headland bounding the gulf of Argalus (Point Calymere), as the southernmost point of the mainland,[3] though it is really more than two degrees north of Cape Comorin, and he distinctly describes the coast as first trending from thence *to the eastward*, while it is in reality the point from whence the coast line takes a direction nearly due north.

§ 23. Still more erroneous was his idea of the magnitude and position of Taprobane, or as he calls it Palæsimundus, which, as we learn from Pliny, was the name of its capital. This he describes as extending into the open sea to the west, almost as far as the opposite coast of Azania![4] It produced, he tells us, pepper, precious stones, fine linen, and tortoiseshell;[5] but as

[2] *Periplus*, § 60.

[3] This is clearly the same headland that is called by Ptolemy Cape Cory (Κῶρυ ἄκρον, vii. 1, § 11), and is regarded by him as the southernmost point of India.

[4] Ibid. § 61. This is in accordance with the view of Eratosthenes, which had been adopted, as we have seen, by most subsequent geographers; but it is strange to find it thus reproduced by a writer whose statements are in general founded upon information collected by himself.

[5] It is remarkable that neither here, nor in any other ancient author, is mention found among the productions of Ceylon of cinnamon, for which that island is now so famous. The same thing is the case according to Sir E. Tennent with the Arabic and other Oriental writers previous to the 13th century, and that author is in consequence disposed to adopt the suggestion of Mr. Cooley, that cinnamon is not really indigenous in the island (Tennent's *Ceylon*, vol. i. pp. 599–604).

he gives us no particulars and has not mentioned any ports or trading-places in the island, it seems certain that it was not habitually visited by traders and that the embassy which had been sent from thence to Rome had not led to any regular commercial intercourse with the country.[6]

The description of the coast from thence to the mouth of the Ganges is so summary that we have no means of identifying any of the tribes or nations mentioned, and no names of ports or cities are given. But the coast is described as trending at first to the east, then to the north, and afterwards verging to the east again as far as the mouth of the Ganges, and the region of Chryse, which our author terms the most easterly point of the continent.[7] But besides this tract or region on the mainland, he mentions *an island* called Chryse, lying in the ocean opposite to the mouths of the Ganges, which he characterizes as the remotest of all lands towards the east, "at the very place of the rising sun."[8] Both names probably belonged in reality to the same locality—the Golden Chersonese of Ptolemy, but our author's ideas on the subject were so vague and obscure that he attempted to solve the difficulty in this manner.

§ 24. But while his geographical notions concerning this part of India were altogether indistinct, he had obtained some valuable information concerning the trade which was carried

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[6] This may help to account for the great ignorance concerning the island which continued to exist down to the time of Ptolemy.

[7] ἡ περὶ αὐτὴν ἐσχάτη τῆς ἀνατολῆς ἤπειρος, ἡ Χρυσῆ. § 63.

[8] κατ' αὐτὸν δὲ τὸν ποταμὸν (τὸν Γάγγην, sc.) νῆσός ἐστιν ὠκεάνιος, ἐσχάτη τῶν πρὸς ἀνατολὴν μερῶν τῆς οἰκουμένης, ὑπ' αὐτὸν ἀνέχοντα τὸν ἥλιον καλουμένη Χρυσῆ. § 63.

This tradition of an island called Chryse (the Golden Island), and of another called Argyrè (the Silver Island), situated off the mouths of the Ganges was (as we have seen) one prevalent long before the time of the Periplus, and is found both in Mela and Pliny. Of course as the knowledge of the coast increased, these vague rumours gradually assumed a more definite shape; but it is very doubtful what was the locality really intended by the Golden Island of the Periplus. If it was truly an island it could hardly have been any other than Sumatra, which has always enjoyed the reputation of abounding in gold, and would be readily reached from the opposite coast of India. But it is perhaps more probable that the land really meant in both cases was the Malay peninsula, which would readily be taken for an island.

on with the Ganges. At the mouth of that river, which he himself calls the greatest of all Indian rivers, though he had previously spoken of the Indus in much the same terms, was situated an emporium of the same name, from which were exported goods brought down from the interior, spikenard, malobathrum, pearls, and muslins of the finest quality, as well as silk from the land of the Seres. Gold was also said to be found in the interior. Opposite to the mouth of the Ganges was situated the island of Chryse already mentioned, which produced the finest tortoiseshell that was found in any part of the Erythræan Sea.[9]

"Beyond this country (he adds), lying quite up to the north, where the sea-coast ends externally at a place in the region of Thina, was a city in the interior called Thinæ, of very great size, from which was exported silk, both in the raw state and spun, and woven into fine stuffs: these were carried to Barygaza overland through Bactria, and on the other hand down the river Ganges to Limyrice."[1] We have here a commercial statement of the greatest interest, showing clearly the two different routes by which silk was brought from China to India, and explaining how it comes to figure as one of the most important articles of export both at Barygaza and in the ports of Limyrice. In both cases it was carried to a great extent overland: and there is no trace of any direct communication *by sea* with China. Had such existed, even in the hands of native traders, it is hardly possible that our author could have remained so entirely in the dark as we actually find him, with regard to all the countries beyond the Ganges. It is very difficult to understand what sense he attached to the words just cited, in which he describes the position of Thinæ and the land of the same name: but he seems to have endeavoured to combine the general notion prevalent among the Greeks from the days of Eratosthenes, concerning the eastern coast of Asia, with the information that he had received concerning the place from whence silk was brought over-

[9] *Periplus*, § 63.

[1] Ibid. § 64.

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land through Bactria and across the mountains to the Ganges. Both of these statements led him to place it far up to the north, as well as in the extreme east of Asia. Hence he supposed his *city* of Thinæ, the name of which is here mentioned for the first time,[2] to be situated not far from the north-eastern extremity of the continent, where the ocean swept round to the back of the Caspian and the Euxine, which last he actually believed to communicate with the northern ocean through the Palus Mæotis.[3] Vague and uncertain as were his notions on this subject, the notice is deserving of attention as the first we possess of China itself: the statements of former writers concerning the Seres and the production of silk being almost wholly without any attempt to define their geographical locality.

With this idea of its position we cannot wonder to find him adding that it was not easy to penetrate to Thinæ, and very few traders came from thence.[4] But he gives a strange account that has a very fabulous air of the manner in which the people of Thinæ procured the much valued spice called malobathron from a neighbouring nation of barbarians whom he terms Sesalæ.[5] The whole of this part of his work is indeed utterly vague and unsatisfactory. He had trustworthy information concerning the course of trade; but none of any value concerning the geography of the countries from which these commodities were brought. Beyond the regions last described everything, he tells us, was inaccessible from excessive cold.[6]

[2] It is unnecessary to point out again that the introduction of the name of Thinæ into the ordinary text of Strabo, and even into passages cited by him from Eratosthenes, was owing only to a strange corruption of the MSS. (See Chapter XVI. p. 630, note.) Our author is indeed the only one who uses the form Thinæ, the name being written Sinæ by Ptolemy, who is followed by Marcianus of Heraclea.

[3] Ibid. § 64.

[4] Ibid. *εἰς δὲ τὴν Θῖνα ταυτὴν οὐκ ἐστὶν εὐχερῶς ἀπελθεῖν· σπανίως γὰρ ἀπ' αὐτῆς τινὲς οὐ πολλοὶ ἔρχονται.* The name is variously written, but the MS. authority appears to be in favour of *Θὶς*, *Θινός* as the name of the country, and *Θῖναι* as that of the city.

[5] Ibid. § 65.

[6] Ibid. § 66.

NOTE A, p. 456.

DESTRUCTION OF TOWN OF ARABIA FELIX.

THIS circumstance of the destruction of the town called Arabia Felix was one of the points relied on by Dodwell in proof of the late date which he assigned to the Periplus. Our existing MS. has the reading *νῦν δὲ οὐ πρὸ πολλοῦ τῶν ἡμετέρων χρόνων Καίσαρ αὐτὴν κατεστρέψατο* (§ 26): and it has been found very difficult to determine who was the "Cæsar" meant. Dodwell maintained that it could be no other than Trajan, who had converted a part of Arabia into a Roman province. But his conquests extended only over the Nabatæan Arabs in the north of the peninsula, and there is no reason to infer that he carried his arms to the south. Dr. Vincent on the other hand refers it to Claudius (in whose reign he places the Periplus), and supposes it to have been done with commercial objects. But it is difficult to see how any such object could have been answered by the destruction of so convenient and important a port. It seems much more likely, as suggested by Dr. C. Müller, that the word *Καίσαρ*, which is introduced in a very singular manner, is corrupt: and that the destruction was really the work of some neighbouring Arab chief, perhaps the Eleazar who is mentioned shortly after as the ruler of Hadramaut. (See his note on the passage in his *Geographi Græci Minores*, vol. i. p. 276.)

NOTE B, p. 465.

MINNAGARA.

There is much confusion with regard to the city here called Minnagara, and described by our author as the capital of the kingdom of Ariace (§ 41). It is supposed by Dr. Vincent and other commentators to be the same as the city of that name already mentioned as the capital of Indo-Scythia (§ 38), but this seems quite incompatible with the manner in which our author speaks of the one city as the inland capital, of which Barbarike at the mouth of the Indus was the port, and the other in connection with

Barygaza and Ariace. Moreover Ptolemy, who certainly described this part of India from materials very similar to our Periplus, has a place of the name of Minnagara which he places in the interior above Barygaza, and not far from Ozene, which is also mentioned by our author (Ptol. vii. 1 § 63). There seems little doubt that we may recognize Ozene in the modern Oojein, a considerable town about 60 miles N. of the Nerbuddah, and Minnagara (if any dependence can be placed upon Ptolemy's positions) must have been situated to the south of it, nearer to that river. Such a displacement of the capital to another city at no great distance, is a common occurrence in oriental history.

Lassen in the map of India appended to his *Indische Alterthümer* places Minnagara in Syrastrene or Guzerat: an inference drawn from the passage above cited, where however the words μητρόπολις τῆς χώρας certainly refer to the whole kingdom of Ariace, not to the particular district of Syrastrene.

CHAPTER XXVI.

PLINY TO PTOLEMY.

Section 1.—*Dionysius Periegetes.*

§ 1. Of altogether a different character from the treatise we have been last considering, is a little work that may probably be referred to about the same period. This is the poetical composition of a writer of the name of Dionysius, who is commonly known by the appellation of Periegetes, to distinguish him among the numerous authors of the same name. This epithet is derived from the title of his poem, which he has termed a 'Descriptive Account of the Habitable World' (Περιήγησις τῆς οἰκουμένης), and which undertakes to give, within the compass of less than 1200 lines, a succinct account of the whole known world, its seas, countries, and islands, with all the more important particulars connected with them, which it was essential for a cultivated man to know. This is, as he repeatedly informs us, the purpose he had in view. He did not write for scientific students, or attempt to enlarge the boundaries of geographical knowledge, but desired only to impress upon the minds of his readers such a general notion of the subject as might enable them to appear to advantage by showing off their superior knowledge among the ignorant.[1] From an author of such modest pretensions it would be unreasonable to expect too much, and the only real value of this versified compendium of geography is as a summary of what

[1] This he tells us in one passage with amusing naïveté:

νῦν δέ τοι ἠπείρου μυθήσομαι εἶδος ἁπάσης,
ὄφρα καὶ οὐκ ἐσιδών περ ἔχοις εὔφραστον ὀπωπήν·
ἐκ τοῦ δ' ἂν γεραρός τε καὶ αἰδοιέστερος εἴης,
ἀνδρὶ παρ' ἀγνώσσοντι πιφαυσκόμενος τὰ ἕκαστα.
vv. 170–173.

was generally known, or at least commonly received, in the days when the author wrote.

§ 2. In this point of view it is unfortunate that we have no distinct information concerning his date: and he has been variously assigned to different periods of the Roman Empire, from the reign of Augustus to the time of Severus and Caracalla, while some recent writers have even placed him a full century later. This uncertainty already prevailed in the times of the Greek scholiasts and lexicographers, and the same confusion existed with regard to the other works attributed to him, or to other authors of the same name. The external evidence on the subject is indeed of little value, while the only internal evidence that has any direct bearing upon the question is the mention in one passage of the Nasamones, as having lately been ruined and exterminated by the Italian arms;[2] an expression that can hardly refer to anything but the defeat of that people under Domitian, when the emperor is said to have remarked that "he had given orders to put an end to their existence."[3] On the other hand there is an absence of all similar allusions to the brilliant successes of Trajan in the East, or to the campaigns of Severus and his sons in the same quarter, which a poet writing after their occurrence could hardly have failed to mention.[4] It may be added that no geographical statements are found in his work which indicate the extension of knowledge that we find in Ptolemy and his successors: but this circumstance is not in itself conclusive, as his geography is for the most part

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[2] Κεῖνον δ'αὖ περὶ χῶρον ἐρημωθέντα μέλαθρα
ἀνδρῶν ἀθρήσειας ἀποφθιμένων Νασαμώνων,
οὓς Διὸς οὐκ ἀλέγοντας ἀπώλεσεν Αὐσονὶς αἰχμή.
vv. 208–210.

[3] Νασαμῶνας ἐκώλυσα εἶναι. Zonaras xi. 19. This defeat is assigned to the year A.D. 86.

[4] After describing at some length (in vv. 1040–1050) the Parthians, and their skill in archery and horsemanship, he adds:

ἀλλ' ἔμπης κατὰ δῆριν ἀμαιμακέτους περ ἐόντας
Αὐσονίου βασιλῆος ἐπεπρήθυνεν ἀκωκή.
vv. 1051, 1052.

These lines have been considered by some as referring to the expeditions of Trajan or Severus, but they are hardly positive enough to have any such application. The Scholiast, on the contrary, refers them to the time of Nero, which is much more plausible.

taken from earlier authors, with little regard to more recent discoveries. On the whole the most probable conclusion appears to be that arrived at by two of the latest editors,[5] that the Periegesis was composed during the reign of Domitian: and its author may therefore be regarded as flourishing from the reign of Nero to that of Trajan.[6]

The author writes avowedly as a mere grammarian, or man of letters, and disclaims distinctly all pretence to superior knowledge, arising from personal observation. He does not, he tells us, "dwell in dark ships, or follow the profession of a merchant, or traverse the Erythræan Sea to visit the Ganges, as many do, regardless of their lives for the sake of accumulating boundless wealth":[7] but he is guided only by the Muses, who enable him, without incurring the toil and risk of distant journeys to describe the seas and lands in remote parts of the world, and enumerate the nations that inhabit them. It must be confessed that if he derived his inspiration from the Muses, he was not indebted to them for much poetic spirit, as his work has as little claim to attention upon this ground as can well be; what little value it possesses being almost wholly geographical rather than poetical. It was doubtless merely its convenience as a versified manual of geography, adapted to the use of the general reader, that rendered it sufficiently popular to become the subject of numerous commentaries and paraphrases, and secured its preservation down to modern times.

Among the few passages of a more ambitious character with

[5] Dr. C. Müller in the *Prolegomena* to his edition of the *Geographi Græci Minores*, vol. ii. pp. xviii.–xxii. where the question is fully discussed. The same conclusion had been already briefly stated by Passow, in the preface to his edition of Dionysius, published at Leipzig in 1825.

[6] C. Müller considers him to be identical with the Dionysius, son of Glaucus, mentioned by Suidas (s. v.) as residing at Rome, and acting as secretary and librarian to the emperors from Nero to Trajan. But there is no proof of this, and the whole account in Suidas of the different men of letters of the name of Dionysius is so confused that it is impossible to place any reliance on it.

[7] οὐ γὰρ μοι βίος ἐστὶ μελαινάων ἐπὶ νηῶν,
οὐδέ μοι ἐμπορίη πατρώϊος οὐδ' ἐπὶ Γάγγην
ἔρχομαι, οἷά τε πολλοὶ Ἐρυθραίου διὰ πόντου,
ψυχῆς οὐκ ἀλέγοντες ἵν' ἄσπετον ὄλβον ἕλωνται. vv. 709–712.

which our author strives to enliven the dryness of a didactic poem, the greater part of which is occupied with geographical names, several of the most considerable refer to the wanderings and exploits of Bacchus, on which he dilates with a complacency that led some ancient commentators to identify him with the Dionysius that was the author of a poem on that subject called Bassarica.[8] There appears to be better ground for supposing him to be the author of a poem called Lithica, on precious stones. One of the most characteristic traits of the little work before us is certainly the care with which it notices the gems and precious stones produced in each country, while with few exceptions their vegetable productions pass unnoticed.[9]

§ 3. The vagueness and figurative character of an author's style, who, while possessing no real poetic fancy, sought to clothe the prosaic details of his subject in poetic language, have inevitably the effect of rendering his meaning in many instances obscure and uncertain: and it would be very difficult, were it worth while, to draw from his poem anything like an intelligible outline of the geographical system that was present to his mind.[1] It has been said by several modern writers that this was based wholly on the work of Eratosthenes; but this is hardly true, except in so far as the system of the Alexandrian geographer had become the foundation of all subsequent treatises down to the time of Ptolemy.

[8] This is mentioned both by Suidas and Eustathius; but according to the latter the Bassarica were written in a rugged style, unlike that of our author; while the Lithica resembled the extant poem in style.

[9] Thus he mentions the production of amber (electrum) by the shores of the frozen sea (v. 315), and of adamas (diamond?) among the Agathyrsi (v. 318), of the stones called "asterius" and "lychnis," on the northern shores of the Ægean (v. 328), of crystal and jasper on those of the Caspian (v. 724), and again at the mouth of the Thermodon (v. 781), of the beryl in Babylonia (v. 1012), and agate (achates) on the banks of the Choaspes (v. 1075); while in India he tells us the inhabitants found beryls, diamonds, jasper, topazes, and amethysts (vv. 1118–1122).

[1] This has indeed been attempted by Dr. C. Müller in Dr. Smith's *Atlas of Ancient Geography*; but it is necessary to take much for granted, or to assume that he followed the map of Eratosthenes, where we have no distinct intimation to the contrary. I have, however, reproduced Müller's map with some alterations for the convenience of my readers.

Dionysius accepts without hesitation the leading outlines of his arrangement: the position of the inhabited world, like a vast island, in the midst of a circumfluent ocean: its greater length from east to west, giving it in form a resemblance to a sling:[2] and its penetration by four great gulfs, of which it is remarkable that he designates the Mediterranean by the name of "the western sea,"[3] an expression that could hardly have come into use, except at Alexandria, and which is not found in any other ancient author. In the division of the three continents he follows the limits commonly adopted, assigning the Tanaïs as the boundary between Europe and Asia, and the Nile that between Asia and Africa: but he adds that other writers regarded the isthmus between the Caspian and the Euxine as constituting the limit between the two former, and the isthmus between the Arabian Gulf and the Egyptian coast as separating the two latter.[4]

His general conception of the form of the world differed from that of any other writer, or at least is differently expressed, as he describes the two continents of Europe and Africa as forming together a great cone, the base of which was the line separating them both from Asia, while that great continent formed on the other side also a kind of cone, the vertex of which was the great promontory of the Emodian mountains, where they projected into the Eastern Ocean.[5] But he is at little pains to be consistent with himself, for in the more detailed description of Asia, after pointing out (in accordance with the system of Eratosthenes) that it was traversed by the great chain of Mount Taurus from west to east,[6] and describing the Scythian and other tribes to the north of the range, he proceeds to explain that the rest of Asia (south of the Taurus) was of a quadrangular form, having that mountain chain for its northern side, the Nile on the west, the Indian Ocean on the east, and the Erythræan Sea to

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[2] *σφενδόνη εἰοικυῖα.* v. 7.
[3] *ἑσπερίην ἅλα.* v. 45, and again v. 58.
[4] vv. 10–25.
[5] vv. 620–625.
[6] vv. 638–643.

the south.[7] This gives, in a rough way, not a bad general idea of Asia south of the Taurus, according to the map of Eratosthenes: but it is impossible to reconcile it with his previously expressed notion of the conical form of the whole continent.

§ 4. The especial importance he attaches to the great Indian promontory as the extreme eastern limit of the world is apparently connected with the poetical notion that Bacchus had erected there two columns "by the farthest shore of the Ocean stream, on the remotest mountains of India, where the Ganges pours its white waters down to the Nysæan shore."[8] These columns thus served to mark the extreme east, as those of Hercules did the west.[9] The passage just cited proves also that he regarded the Ganges, as Eratosthenes had done, as flowing from west to east, and pouring its waters into the Eastern Ocean. There is indeed nothing to intimate that he had derived any additional information concerning India from any recent discoveries, or that he was in any degree in advance of the Greek writers before the time of Augustus in respect to it, while he has thrown its geography into utter confusion in order to bring it into accordance with the supposed exploits of Bacchus in that country.

He is indeed familiar with the *name* of the Seres, but only as a people who produced the silken stuffs that were so well known in Europe: and he mentions them as a *Scythian* tribe, in connexion with the Tochari and Phruni;[1] two tribes who are mentioned by Strabo, and are by him also associated with the Seres.[2] In both cases there can be little doubt that they supposed the silk to be produced in the country from which it was immediately received, the western provinces of Chinese Tartary, which adjoined the Bactrians and Sogdians on the east. There is no trace of their having any notion that the

[7] vv. 881–893.
[8] vv. 623–626.
[9] vv. 1164, 1165.
[1] καὶ Τόχαροι Φροῦνοί τε καὶ ἔθνεα βάρβαρα Σηρῶν. v. 752.
The MSS. have Φροῦροι, but the most recent editors have adopted the reading Φροῦνοι. Avienus in his translation reads Phruni. v. 934.
[2] Strabo, xi. p. 511. See Chapter XXII. p. 285.

Seres were really situated in the extreme east of Asia, on the shores of the Eastern Ocean: a fact already known, though in an obscure way, to the author of the Periplus.[3]

§ 5. In general it may be remarked that his account of the various Scythian tribes that surrounded the Caspian Sea is unusually clear and distinct, though he of course shared the general belief that the Caspian itself had an outlet into the Northern Ocean. His enumeration of the Scythian tribes in Europe north of the Euxine, on the contrary, is very confused and careless, mixing up names taken from Herodotus, and even the Hippemolgi of Homer, with those of nations known only in his own day. Among these the Alani deserve special notice, as the first definite mention of a people destined before long to play so important a part among those that contributed to the downfall of the Roman Empire.[4] He places them north of the Tauri, whom he describes very obscurely, so that a reader could gather no notion of the figure or position of the Tauric Chersonese: the Alani were apparently therefore at this time settled in the Ukraine.

A still more celebrated name is found for the first time in this little poem—that of the Huns—if indeed an obscure tribe mentioned by our author on the east side of the Caspian, under the name of Unni,[5] be correctly identified with that far-famed people. But even supposing this assumption to be correct, it is certainly no ground for maintaining, as one of the recent editors has done,[6] that the poem must be brought down to a late period, when the Huns had become well known to the Romans. This did not take place till the Huns made their appearance in the countries on the Danube, and there came into collision with the Roman arms: the passing mention of them in a distant part of Asia (if they be really the people meant) would seem on the contrary to prove that the poem was composed before their name had become well known

[3] *Periplus of the Erythræan Sea*, § 64. Mela also, as we have seen, placed the Seres in the extreme east of Asia.

[4] vv. 305, 308.

[5] Οὖννοι δ' ἐξείης. v. 730.

[6] See Bernhardy in his edition of the *Periegesis*, p. 514.

or formidable, and consequently before their invasion of Europe.

§ 6. Of the western nations of Europe his knowledge was evidently very slight and imperfect, and was doubtless derived only from Eratosthenes and other early Greek authorities, without reference to the extended knowledge introduced by the Roman conquests. He mentions indeed the two British Islands, situated on the shores of the Northern Ocean, opposite to the mouth of the Rhine; and adds that they exceed all other islands in size, but does not mention their names.[7] He speaks also of Thule, where during the height of the summer the sun shines all through the days and nights alike: but places it a long way off in the Ocean.[8] Like all other Greek writers, he places the Islands, "which were the birth-place of tin,"[9] in the neighbourhood of Spain, apparently not far from the Sacred Promontory. But he dilates also at some length on a group of islands opposite to the land of the Amnitæ, where the women celebrated Bacchic rites and orgies with especial zeal.[1] There can be no doubt that this refers to the story told by Strabo, from Posidonius, of the supposed Bacchic rites observed in an island opposite to the mouth of the Loire.[2]

Of the other islands celebrated among the ancients, Dionysius notices Chryse, or the Golden Island, in the far east, "at the very rising of the sun": and Taprobane, "the mother of Asiatic elephants," the seas around which were infested with huge marine monsters, which would readily swallow a whole ship, crew and all![3] Such were the fables still current concerning these seas, notwithstanding the greatly increased amount of commerce in the Indian Ocean.

§ 7. Of India itself, as well as of Arabia, he gives a com-

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[7] vv. 566–569.

[8] vv. 580–586.

[9] *νήσους θ' Ἑσπερίδας, τόθι κασσιτέροιο γενέθλη.* v. 563.

He is the only author who gives the name of Hesperides to the "tin-islands," and from the very confused manner in which he speaks of them, it is probable that he had confounded the two.

[1] vv. 570–579.

[2] Posidonius ap. Strab. iv. 4, p. 198. He calls the people Samnites.

[3] vv. 596–604.

paratively full account: but in both cases his description is principally occupied with a poetical panegyric on the natural productions of the two countries—the spices of the one and the precious stones of the other[4]—while his geographical details are scanty and indistinct. He had however tolerably clear notions of the boundaries of both countries, and of the position of Arabia, in which he enumerates the tribes of the Nabatæans, with two smaller tribes adjacent to them in the north, and towards the south, the Minæans, Sabæans, and Cletabeni. These last are evidently the same with the Cattabanes of Strabo; and the Chatramis of our author is clearly the same with the Chatramotitis of Eratosthenes, the modern Hadramaut. Altogether it appears that he had tolerably authentic information concerning the Arabian peninsula, which he probably derived from Eratosthenes. But it is strange that he describes the people who dwelt on the western shore of the Red Sea, known to the Greeks in general as the Troglodytes, by the Homeric name of Erembi, an appellation which is not found in any other ancient geographer, as that of an existing nation.[5]

Another point in regard to which his statements differ from those of other writers is that of the Nile, which he describes as "descending from the hills of the sun-burnt Blemmyes": "flowing with a copious stream from Libya towards the east, and called by the Ethiopians Siris: the name of Nile being first bestowed upon it by the inhabitants of Syene, after it has turned to the north."[6] Vague as is this description, it appears certainly to proceed from some other authority than Eratosthenes, and rather resembles the confused account which Pliny

[4] Like other contemporary writers he dwells in strangely exaggerated terms upon the wealth of Arabia, which he describes as inhabited by the wealthiest and most splendid tribes in the world,

ἔξοχα γάρ μιν
πασαών πολύολβα καὶ ἀγλαὰ φῦλα νέμονται.
v. 934.

[5] It is well known that the meaning of the name was the subject of much dispute among the Greek grammarians and geographers. Strabo indeed gives the preference to the opinion that identified them with the Troglodytic inhabitants of the west coast of the Arabian Gulf (i. 2, § 34, p. 42); but this is a very different thing from applying to them the name of Erembi, as if it were a customary appellation.

[6] vv. 220–224.

has given, as derived from Juba. No mention is found of the affluents of the Nile, nor is even the name of Meroë noticed, which figured so prominently in all the Alexandrian writers.

§ 8. With Egypt our author was evidently familiar, and there is very little doubt that whatever was his actual birthplace, he studied and wrote at Alexandria.[7] The uncertainty both as to the place and time of his birth seems to show that he did not attain to any great reputation during his lifetime: and it was apparently not till a later period that his little work began to attract attention. But during the decline of the Roman Empire, its compendious character and poetical form combined to give it great popularity, and two poetical translations of it were made into Latin: the one by Rufus Festus Avienus in the fourth century, the other by the celebrated grammarian Priscian in the sixth. Besides these there are still extant numerous scholia, and two complete paraphrases in Greek prose, in addition to which we possess an elaborate commentary upon the whole poem by Eustathius, the archbishop of Thessalonica in the twelfth century, so well known for his equally valuable and elaborate commentaries upon the Iliad and Odyssey.[8] None of these commentators however throw any real light upon the geographical points touched on by the author, being almost entirely occupied with the historical and poetical allusions contained in the poem. There can be no doubt indeed that these constituted the main object of the author himself. His work was designed rather as a geographical handbook for a reader of the Greek poets, than as

[7] He is called by Eustathius a Libyan, but by the Scholiast an Alexandrian, though the latter adds that both his country and parentage were uncertain. Several modern writers, however, infer from the extraordinary manner in which he dilates on the praises of the river Rhebas, an insignificant stream in Bithynia, near the mouth of the Thracian Bosphorus, that he must have been a native of that country or of Byzantium. But even on that supposition the passage in question (vv. 794–796) remains unexplained, as there is no reason why he should have selected this trifling streamlet in preference to many others in the same region.

[8] All these commentaries, as well as the Latin versions by Avienus and Priscian, are included in the elaborate edition of Dionysius by Bernhardy (8vo. Lipsiæ, 1828); and in the second volume of C. Müller's *Geographi Græci Minores* (Paris, 1861).

a systematic or scientific treatise on geography. But the importance attached to it as such would seem to show that there was no more valuable summary of the kind to be found in the later Greek literature. Even since the revival of letters in Europe, this little work, from its convenience as a manual, enjoyed a reputation far above its merits, and was actually included among the books specially studied in the university of Oxford down to a comparatively recent period.

SECTION 2.—*Tacitus.*

§ 1. THE period between the death of Pliny and the publication of the great work of Ptolemy was not marked by any important additions to geographical knowledge, resulting from the extension of the Roman conquests. In Britain however the Roman arms were carried farther than they had ever been before, and much additional information obtained concerning the island, under the government of Julius Agricola, who was appointed to the command of the province in A.D. 78. As we have already seen, the Roman dominion had at that period been already extended over the whole of the southern portion of the island, as far as the borders of Scotland; but the northern regions were still unsubdued, and in great measure unknown, the Caledonian Forest, as observed by Pliny, still forming the limit of all that was known concerning them. Agricola carried his arms in the third year of his government (A.D. 80) as far as the river Tavus (Tay), but he subsequently devoted himself to occupying in force the districts south of the Firth of Forth, and having remarked the important military position afforded by the close approach of the two estuaries of the Clyde and the Forth (called by Tacitus Clota and Bodotria) he fortified the isthmus between them with a line of forts, which had the effect, as his biographer observes, of driving the barbarians as it were into another island.[9] He

[9] Tacit. *Agric.* c. 23, "Summotis velut in aliam insulam hostibus."

MAP OF THE WORLD ACCORDING TO DIONYSIUS PERIEGETES.

London : John Murray.

next subdued the country to the south-west, facing the coast of Ireland, and occupied it with a Roman force, as if he meditated the conquest of that island also. But he contented himself with affording protection to one of the petty chiefs or kings, who had been expelled from his native land, and through his means, combined with the information collected from merchants and traders, the Romans for the first time obtained authentic accounts of the lesser of the Britannic Islands.[1] There can be little doubt that the information derived from this source became one of the main authorities for the greatly extended knowledge of Ireland displayed by Ptolemy.

§ 2. But Agricola was not long content with maintaining the line of defence between the Firths of the Clyde and Forth: in the sixth year of his government (A.D. 83) he began to extend his conquests beyond the latter estuary, supporting his land forces with a fleet that moved along the eastern coasts and establishing fortified posts from distance to distance as he advanced into the interior. In this campaign he defeated the Caledonians in a decisive battle, but obtained a still more important victory the next summer (A.D. 84) over their united forces under a chief called Galgacus. The scene of this last victory, which appears for the time to have struck terror into the northern tribes, is placed by Tacitus at the foot of a hill called Graupius, a name which has been corrupted into Grampius, and though evidently a merely local appellation, has by a strange perversion, been converted by modern geographers into the name of "the Grampians," as a general term for the principal range of mountains which form the Highlands of Scotland. There is nothing whatever to determine the locality indicated by Tacitus, his whole description of the campaign being quite vague and general. But it is clear that the "Mons Graupius" was not a high or conspicuous *mountain*, but merely a hill or ridge of heights, as it was the position *occupied* by the British army, amounting to more than thirty thousand men.[2]

[1] Ibid. c. 24.

[2] Ibid. c. 29. "Ad montem Graupium pervenit, quem jam hostis insederat." The gradual progress of

After the successful close of his campaign against the Caledonians, Agricola ordered his fleet to circumnavigate the northern part of the island: an undertaking which was safely accomplished, and it was thus, as Tacitus affirms, that the Romans first *proved* Britain to be an island,—a fact which had previously been only surmised or assumed.[3] The fleet at the same time visited and subdued the Orcades: which Tacitus erroneously considers as having been previously unknown. A glimpse was even obtained of a more distant land, to which they gave the name of Thule:[4] in this case the designation was unquestionably applied to the group of the Shetland Islands. It is a strong instance of the effect of prejudice, and the influence of long established notions, that the voyagers reported the sea in these parts to be heavy and sluggish, so as to offer obstruction to the rowers, and even be raised with difficulty by the winds into waves of any height.

§ 3. The life of Agricola by his son-in-law Tacitus is generally regarded as a model of classical biography, and the notices it contains of the British islands and their population are, together with those of Cæsar, the most valuable which we possess. His ethnographical observations are of peculiar interest, as there can be no doubt that the Roman generals

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the erroneous application of the term to the mountain range now called the Grampians — an extension only of modern usage—is fully traced by Mr. Burton in his *History of Scotland*, vol. i. chapter i. p. 12–15. The name is differently given in the MSS. of Tacitus as Grampius and Graupius; but according to the most recent editor all the best MSS. write the name Graupius (see Wex's Prolegomena to his edition of the *Agricola*, p. 194). The only other authority for the name is the occurrence in the itineraries of Richard of Cirencester, of a station "Ad montem Grampium;" but the spurious character of that compilation is now generally acknowledged, and its authority therefore utterly worthless.

[3] *Agric.* cc. 10, 38. It must not be supposed, however, that the fleet actually *sailed round* the whole of Scotland, in which case they could not have returned, as Tacitus expressly tells us that they did, to the port from whence they set out ("simul classis secunda tempestate ac fama Trutulensem portum tenuit, unde proximo Britanniæ latere lecto omni redierat." c. 38). The "portus Trutulensis" is unknown, but the words which follow evidently point to the voyage having been confined to the one side of Britain. As soon as it had reached the northern extremity of the island, and found the coast trending to the west and south, they would consider they had attained their object. On this point I entirely concur with the remarks of Dean Merivale in his note on the subject (vol. vii. p. 89).

[4] "Dispecta est et Thule." Ibid. c. 10.

had by this time been brought into contact with all the principal tribes that inhabited the island. The Caledonians, he tells us, were proved by their red hair and large limbs to be of German origin: the Silures on the contrary had dark countenances and generally curly hair: and this circumstance, combined with their position opposite to Spain, led to the belief that they were descended from Spanish (Iberian) colonists. The nearest inhabitants to Gaul resembled the Gauls in their physical characters; as well as in their sacred rites and superstitions, and their language was nearly the same.[5]

Tacitus also notices the peculiarities of the British climate: its frequent mists and showers, but the absence of severe cold: as well as the great length of the days, so that in the northern parts of the island, there was during the summer nights hardly any interval of real darkness.[6] He points out also very clearly the influence of the tidal ocean on the configuration of the land, and the manner in which deep estuaries, formed by the flux and reflux of the tides, penetrated quite into the interior of the country.[7] At the same time he had apparently a very imperfect idea of the geographical position of the British Islands, and speaks of Ireland as situated "midway between Britain and Spain," in a way which, without construing the phrase too strictly, shows an entire misconception of their true relations.[8]

§ 4. Another treatise of the same eminent writer has a more direct bearing upon geography. But while the "Germania" of Tacitus contains a masterly sketch of the manners and customs,

[5] *Agric.* c. 11.

[6] Ib. c. 12. "Dierum spatia ultra nostri orbis mensuram, et nox clara, et extrema parte Britanniæ brevis, ut finem atque initium lucis exiguo discrimine *internoscas*." He adds that some persons maintained that, "if it were not for the clouds," the sun would be seen all night long! a curious instance of the way in which exaggerations once received, still clung to these remote regions.

[7] Ib. c. 10.

[8] "Siquidem Hibernia medio inter Britanniam atque Hispaniam sita" (c. 24). His remarks on the position of the Silures opposite to Spain (c. 11), evidently point to a similar misconception.

It is worthy of notice that while he speaks of Britain "as producing gold and silver and other metals," to reward its conquest (fert Britannia aurum et argentum et alia metalla, pretium victoriæ, c. 12), he makes no special mention of tin, or the tin islands.

the laws and institutions of the German people, and gives an elaborate review of the nations and tribes into which it was divided, it will be found to contribute very little to our real geographical knowledge of the country. The author indeed appears to have been in great measure destitute of the geographical faculty, and shows no appreciation of the important influence which the natural features of a country must always exercise upon the character and history of its inhabitants. Nor had any events calculated to advance the geographical knowledge of Germany occurred in the period immediately preceding the time of Tacitus.[9] The Roman arms were no longer carried into the heart of the country, as they had been in the days of Augustus; and Tacitus confesses with shame that the Elbe, which had once been so familiar to the Romans, was now known to them only by hearsay.[1] It is probable indeed that commercial relations with the German tribes had acquired increased extension and importance, as hostilities had become less frequent; and some faint notions concerning distant tribes, previously unknown, might have been transmitted in this manner.[2] But we have frequently seen how vague and imperfect was the geographical knowledge to be derived from such sources.

It is a clear proof how little Tacitus entered into the geographical portion of his subject that, while he gives a detailed and accurate account of the Rhine and the Danube, both of

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[9] The expedition of Domitian against the Chatti, in A.D. 84, was in reality utterly unimportant, though extolled by his flatterers, and celebrated by titles and coins. But even such an event would contribute to keep alive, or arouse afresh, public interest in the subject.

[1] "In Hermunduris Albis oritur, flumen inclitum et notum olim; nunc tantum auditur." c. 41.

[2] Relations also of a friendly character were still maintained with some of the German tribes by the Roman government. A king of the Cherusci, named Chariomer, sent to Rome to invoke the assistance of Domitian; and a chief named Masyus, king of the Semnones, visited Rome in person during the same reign (Dion Cass. lxvii. 5). The intervention of the emperor was also invoked, though to little purpose, in a war that had arisen between the Lygii and the Suevi (Id. ibid.). All these occasions might furnish Tacitus with opportunities of obtaining valuable information.

which, as forming the Roman frontier, were well known,[3] he tells us nothing of the affluents of either stream, nor does he notice even the name of the Ems or Weser, both of them so familiar to the Romans in the days of Augustus. Even the Elbe (Albis) obtains merely a passing mention in connection with its source. Nor do we find the name of the Vistula, which ever since the days of Agrippa had been regarded as the eastern boundary of Germany on the side of Sarmatia.

§ 5. But if he has given us little positive information of a geographical kind, his ethnographical account of the German tribes is unquestionably one of the most valuable records of the kind that has been transmitted to us from antiquity; and if his statements cannot in all cases be accepted as trustworthy, they must still form the basis of all discussion upon the subject. It is impossible here to enter into the many complicated questions that arise in respect to them:[4] it will be sufficient to give a brief outline of his views and of the geographical positions (so far as they are indicated) which he assigns to the several tribes and nations.

He begins indeed with a genealogical myth concerning the descent of the principal nations of Germany from the three sons of Mannus, which indicates a division into three principal nations or races: the Ingævones, next to the Ocean, the Herminones in the interior, and the Istævones beyond them;[5] a classification which nearly coincides with that adopted (though

[3] He places the sources of the Danube in the Mons Abnoba, as Pliny had done before him; and contrasts its gentle and moderate altitude with the inaccessible precipices of the Alps in which the Rhine took its rise ("Danubius molli et clementer edito montis Abnobæ jugo effusus," c. 1). It is clear that both writers applied the name of Abnoba to the Schwarzwald or Black Forest; and this is confirmed by an inscription found in that part of Germany (Orelli, *Inscr.* No. 1986). Ptolemy erroneously transfers it to a position farther north.

[4] For the fuller discussion of these I must refer my readers to Dr. Latham's "*Germania of Tacitus*" (8vo. Lond. 1851), and the copious dissertations appended to it; as well as to the valuable work of Zeuss (*Die Deutschen und die Nachbarstämme* (München, 1837). Ukert has for the most part been content to collect the statements of ancient writers, without attempting to derive from them any conclusions of his own.

[5] "Manno tres filios adsignant, e quorum nominibus proximi Oceano Ingævones, medii Herminones, ceteri Istævones vocentur." c. 2.

less clearly stated) by Pliny;[6] but of which Tacitus himself takes no further notice. In the descriptive part of his work he begins with enumerating the petty tribes that immediately adjoined the Rhine, and those which in his time had crossed over into Gaul, with whom he associates the Batavi, who occupied an island formed by the two arms of the river. These had originally, he tells us, been a tribe of the Chatti; they were now subject to the Roman dominion, as were also the Mattiaci, though situated on the right bank of the Rhine.[7] A considerable portion also of what was *geographically* included in Germany, being beyond the Rhine and the Danube, was in the time of Tacitus become annexed to the Roman territory and subjected to regular provincial government. This was the district known as the Decumates Agri, extending from the Rhine to the Danube, and comprising the greater part of the modern states of Baden and Würtemberg.[8]

§ 6. Beginning from the Hercynian Forest, and proceeding northwards, the first people was the important nation of the Chatti, who had figured so conspicuously in the wars with the Romans. These may be placed without doubt in the modern Hesse, the name of which, according to German philologers, is derived from that of the Chatti. Beyond these, on the right bank of the Rhine, were the Usipii and Tencteri, two nations already well known from their mention by Cæsar. Next to the Tencteri, still proceeding towards the north, lay

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[6] Plin. *H. N.* iv. 14, s. 28, §§ 99, 100.

[7] The Mattiaci may be placed without question in the district of the modern Nassau, between the Main and the Lahn. They were already noted for the hot springs that occurred in their territory (Plin. *H. N.* xxxi. 2, § 20).

[8] Its extent in the time of Tacitus cannot be defined, though he expressly tells us that its boundary was marked by an artificial limit or line of defence, and that it had been brought under the regular government of Rome. ("Mox limite acto, promotisque præsidiis, sinus imperii et pars provinciæ habentur," c. 29).

The name of the Decumates Agri does not occur in any other writer; but the district in question certainly continued in the hands of the Romans until it was wrested from them by the increasing power of the Alemanni. At what time the existing line of fortification, the remains of which may be traced at intervals from the Main to the Danube, was constructed we are unable to determine. (See this subject fully discussed by Ukert, *Germanien*, pp. 273–296.)

the territory previously occupied by the Bructeri, but which had recently been conquered by the Chamavi and Angrivarii, who had driven out the Bructeri, and utterly destroyed them. This last statement is however certainly an exaggeration, as the Bructeri re-appear in history, and are repeatedly mentioned.[9] In front of the Chamavi and Angrivarii lay the Frisians, a powerful people, extending from the Rhine to the Ocean, and surrounding some vast lakes which had been navigated by Roman fleets.[1] This obviously refers to the expeditions of Drusus and Germanicus already noticed.

Having thus followed the west of Germany to the Ocean, he turns to the nations facing the north: the first of whom was the great people of the Chauci, who extended from the frontiers of the Frisians to those of the Chatti, and were in the time of Tacitus one of the most powerful and illustrious nations in Germany. The Cherusci on the contrary, who adjoined the Chauci and Chatti on their flank, had declined from their ancient valour, and come to be regarded as a stupid and slothful people. The Cimbri, who also dwelt in the same corner of Germany, adjoining the Ocean, had dwindled into a small tribe, though still retaining the fame of their ancient glorious exploits.[2]

In describing these portions of Germany, which lay nearest to the Roman frontier, there can be little doubt that Tacitus had authentic information both as to the names and position of the different tribes. But so little did he trouble himself with geographical details, that he has not in a single instance described their limits or situation with respect to the great

[9] See Latham's *Germania*, p. 111.

[1] They were divided into the Greater and Lesser Frisians. Tacitus adds: "Utræque nationes usque ad Oceanum Rheno prætexuntur, ambiuntque immensos insuper lacus, et Romanis classibus navigatos" (c. 34). One of these lakes was unquestionably the same as is called by Mela Flevo, and which communicated both with the Rhine and the sea; but it is very probable that there may have been a string of such shallow lakes along the coast. See Chapter XX. p. 187.

The whole of this line of coast has been subject to frequent physical changes, owing to the irruptions of the sea, which render it very difficult to understand its ancient geography.

[2] *Germania*, c. 37. "Parva nunc civitas, sed gloria ingens."

rivers by which the country was traversed—the Ems, the Weser, and the Elbe—so familiar to the Romans during the wars of Drusus and Germanicus: and he has merely indicated their relative position by the use of the vague terms "in front," "in flank," or "at the back" of those previously described. Nor where he mentions the Cimbri and dilates on their past fame, does he take any notice of the great Cimbric Chersonese, which forms so important a feature in the physical geography of Northern Germany, and which was certainly well known to Pliny.[3]

§ 7. Tacitus now proceeds to describe the great nation of the Suevi, which, as he expressly tells us, was not a special name of a particular people, but a general appellation including the tribes of a large part of Germany.[4] The first and most celebrated among them were the Semnones—a name well known to the Romans from the days of Augustus—who claimed to be the most ancient and chief clan of the whole race: a pretension that was supported by the existence in their country of a sacred grove of peculiar sanctity. They were at the same time one of the most numerous tribes, boasting of not less than a hundred *pagi* or cantons.[5] Their neighbours the Langobardi on the contrary were a small people, though formidable from their courage and warlike disposition, which enabled them to maintain themselves in the midst of the more powerful nations that surrounded them. Tacitus gives us no clue to their situation; and there then follows a list of seven other tribes, which he himself treats as of little importance, but among which occurs one name, that of the Angli, which is interesting as the first mention of the people that was destined to give name to England.[6] There is

[3] Plin. *H. N.* iv. 14, § 97. It is remarkable that neither here nor elsewhere does Tacitus mention the name of the Teutones, whose fame was so inseparably connected with that of the Cimbri, and who are noticed as an existing people of Germany both by Pliny and Ptolemy (Plin. *ib.* § 99; Ptol. ii. 11, § 17).

[4] "Majorem enim Germaniæ partem obtinent, propriis adhuc nationibus nominibusque discreti quanquam in commune Suevi vocentur." c. 38.

[5] c. 39. [6] c. 40.

nothing, however, to indicate their position, and it must not be hastily assumed that they already occupied the district between the Elbe and the Eyder where we find them established at a later period. All these tribes he tells us united in the common worship of a deity whom he calls Nertha or Hertha, and identifies with Mother Earth: she had a sacred grove in an island in the Ocean, the position of which he does not indicate, but which is generally supposed to be Heligoland.[7]

§ 8. He now returns to the south of Germany, and the nations adjoining the Danube. The first of these are the Hermunduri, who were a comparatively civilized people, and carried on considerable intercourse with the Roman provincials on the other side of the Danube. Adjoining them were the Narisci, and then the Marcomanni and Quadi: all of them warlike nations, already known to the Romans as such, and destined to become still more so at a later period. He appears to have regarded these tribes as extending eastwards to the confines of Dacia and Sarmatia.[8] At the back of them (by which he must mean bounding them on the north) were the little known and probably unimportant tribes of the Marsigni, Gothini, Osi and Burii: and beyond them the Lygii, a great nation, who were already known by their war with the Marcomanni. Some of these nations—the Osi and Gothini—are distinctly said by Tacitus to be of *non-German* origin; and it is very probable that there was considerably more admixture of Sarmatian—that is, of Slavonian—race, in these eastern parts of Germany, than he was aware of.[9] But it is a

[7] Some writers, however, identify it with the island of Rügen in the Baltic, which would of course be equally regarded by Tacitus as situated in the ocean; and where there certainly existed from a very early period a grove and lake of peculiar sanctity.

[8] c. 43.

[9] This may be admitted without pressing the conclusion so far as has been done by Dr. Latham, who has laboured hard to make out a Slavonian, or at least *non-German* character, for the tribes described by Tacitus, in every case that admitted a possibility of doubt, and to circumscribe the area of Germanic population within the narrowest possible limits. Many of his arguments appear to me very dubious and far-fetched, while he is ready to discard far stronger presumptions on the other side of the question.

hopeless task to follow out in detail the ethnography of these various nations. Tacitus speaks of this part of Suevia as traversed by a great range of continuous mountains, by which he probably meant the Sudeten and their offshoots: and he places the Lygians *beyond* these. In the same part of Germany were the Gothones, as well as the Rugii and Lemovii, who adjoined the Ocean.[1] There can be no doubt that the name of the Rugii is still retained by the island of Rügen in the Baltic—which was of course termed by Tacitus the Northern Ocean—and we thus obtain one fixed point for the geographical arrangement of these northern tribes.

It is unfortunately the only one. His Lemovii are otherwise unknown: and when he speaks of the Æstyans as inhabiting "the right shore of the Suevian sea," his ideas of the geography are so vague, that we know not what sense to attach to the phrase. The Æstyans, according to his account, were the people in whose country amber was principally found:[2] and this affords us some clue to their position, which may be assigned to the sea-coast of East and West Prussia—and perhaps extended west of the Vistula.[3] Beyond these he mentions in a vague and general way, the Peucini or Bastarnæ, the Venedi, and the Fenni: but adds that he is in doubt whether to regard them as of German or Sarmatian race. The Fenni, whose name here appears for the first time,[4] are

[1] c. 43.

[2] *Germania*, c. 45. His account of the manner in which the amber was found, is very correct, and his observations on the nature and probable origin of the substance itself are very curious and interesting. He tells us it was called by them "glesum," a term probably connected with the German word "Glas."

[3] There can be little doubt that the name of the Æstyi was a German appellation, and was in reality equivalent to "men of the east." This is confirmed by the different form Ostyæi (Ὀστιαῖοι) preserved by Strabo from Pytheas, which doubtless refers to the same people (Strabo, i. p. 63; compare Steph. Byz. s. v. Ὀστιῶνες). Whether they were of German or Sarmatian race is a point that we have no means of determining.

[4] There can be no doubt that the Fenni were *Finns*, but it does not therefore follow that Tacitus's information extended beyond the Gulf of Finland; there were doubtless in his time tribes of Finnish extraction extending much farther south.

It may be observed that the name of Finns is that by which they are known to the Germans; not a native appellation. It therefore confirms what we might otherwise have naturally inferred, that Tacitus derived all his information concerning these nations from German

described as a very rude and barbarous people, having no fixed dwellings, subsisting only on hunting, and using arrows tipped with bone.

§ 9. We have seen that in the time of Pliny vague rumours had already reached his ears of the existence of vast islands in the northern seas. Tacitus had probably heard the same, though he does not attempt to assign them any definite locality, contenting himself with describing the "states of the Suiones" as situated in the Ocean itself:[5] but he apparently places them north of the Rugii and Lemovii, just where the southern provinces of Sweden would first come to be known. But it is singular that while he is the first writer to mention the name which has been perpetuated in that of the modern Sweden, he has no trace of those of Scandia and Scandinavia applied by other writers of antiquity, both before and after his time, to the supposed great island of the north. He describes the Suiones as a Suevian race—probably a mere inference from the resemblance of name—and ascribes to the same stock another people termed the Sitones, whom he describes as adjoining the Suiones, and resembling them in all respects except that they were governed by a woman.[6] Beyond the Suiones to the north he has the usual fable of a sluggish and immoveable sea, coupled with the true fact that the light of the setting sun was prolonged till it mingled with that of sunrise.[7]

§ 10. When we compare the statements furnished us by

sources. The same remark applies to the Venedi, who are obviously the Wends—the name by which the Germans always designate the neighbouring Slavonian populations; but which is no more a national name than that of Wälsch, which they apply in like manner to the Latin races on their southern frontiers.

[5] "Suionum hinc civitates, ipso in Oceano" (c. 44). They had numerous fleets of ships built as those of the Veneti are described by Cæsar, with double prows.

[6] "Suionibus Sitonum gentes continuantur; cetera similes uno differunt quod femina dominatur" (c. 45).

This report has been explained, plausibly enough, by the suggestion that the Sitones were a Finnish race, who would be called in their own language Qvæns or Cvens, a term readily confused with the Swedish 'quinna,' a woman, so that Cvena-land would be understood as quinna-land or "terra feminarum" as it is actually called by Adam of Bremen. (See Zeuss, *die Deutschen*, p. 157. Latham's *Germania*, p. 174.)

[7] Ibid.

Tacitus concerning the names and distribution of the different nations of Germany with those given by earlier writers, such as Pliny, Mela and Strabo, or with the statements of Ptolemy half a century later, it is impossible not to be struck with the great diversity between them—a diversity certainly not to be explained solely, or even principally, by actual changes in the population. It is evident that in many cases the name only had been changed, while in others the increased importance acquired by one tribe over those of its immediate neighbourhood, had led to their being all included under the one general appellation; while on the other hand tribes once considerable had dwindled into insignificance, and their names were in consequence omitted. In some instances probably general names were given or assumed on the formation of new leagues or confederacies, in the manner that we know to have taken place at a later period in regard to the Franks and the Alemanni.

SECTION 3.—*Progress of Roman Arms—Extension of the Empire.*

§ 1. The period from the death of Domitian (A.D. 96) to that of Marcus Aurelius in A.D. 180, was that during which the Roman Empire attained to the highest point of its power and prosperity. But its limits were very little enlarged beyond what they had been in the time of Augustus. The policy adopted by the founder of the Empire, and which was said to have been consecrated by his testament, as a fundamental maxim for the guidance of his successors—not to extend the frontiers beyond the Rhine, the Danube and the Euphrates—was in fact observed with trifling exceptions until the time of Trajan. That monarch was the first to carry his arms, with a view to the permanent annexation of provinces, beyond the Danube on the one side, and the Euphrates on the other.

On the side of the Danube indeed his hostilities were cer-

tainly not unprovoked. The "rugged Dacians,"[8] who, even in the time of Augustus, were looked upon as one of the most formidable foes that hung upon the outskirts of the newly-consolidated monarchy, but of whom we hear but little for nearly a century afterwards, had during the reign of Domitian risen into much greater importance, and assumed all at once a threatening attitude. For this change they were indebted principally to a chief named Decebalus, who appears, as was so often the case with barbarian nations, to have consolidated the tribes, which at other times were practically independent, into one united people, and thus constituted a really formidable power.[9] With this force he invaded the Roman province of Mœsia, defeated the governor, Appius Sabinus, and carried his victorious arms through the whole province. This formidable inroad compelled Domitian to take the field in person, but he soon gave up the command to a general named Cornelius Fuscus, who not only drove the Dacians out of Mœsia, but followed them across the Danube into their own country, where however he was surrounded by the enemy and his whole army cut to pieces. This disaster—apparently the greatest that had befallen the Roman arms since that of Varus—was in some measure repaired by another Roman general named Julianus, who defeated the Dacians at a place called Tapæ, and advanced into the immediate neighbourhood of their capital. But the peace ultimately concluded (A.D. 91) was far from advantageous to Rome, and not only left the Dacians in possession of their former territories, but sanctioned the payment, in a more or less direct form, of a yearly tribute.[1]

§ 2. This state of things Trajan would not allow to continue.

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[8] "Dacus asper." Horat. *Carm.* i. 35, 9.

[9] Very little is known of Decebalus: but it is certain that this name was in reality only a regal title. His real name was Diurpaneus or Dorpaneus, as he is called by Orosius (viii. 10) and Jornandes (*de Reb. Get.* c. 13).

[1] Dion. Cass. lxvii. 6–10; Oros. *l. c.*; Jornandes, *l, c.* The few facts that are preserved to us concerning these campaigns against the Dacians, are brought together and arranged by Dr. Imhof (*C. Flavius Domitianus*, pp. 54–60). It appears that Domitian studiously sought to conceal the magnitude of the losses sustained by Fuscus.

In A.D. 101 he crossed the Danube at the head of his army, penetrated into the heart of the country now called Transylvania, where he defeated the forces of Decebalus at Tapæ, and ultimately compelled the Dacian monarch to sue for peace on humiliating terms. But these were not long observed by the barbarian king, and Trajan soon found himself compelled to cross the Danube a second time (A.D. 104) in order to chastise him for their infraction. This second campaign ended in the total defeat and death of Decebalus, the capture of his capital, Sarmizegethusa; and the reduction of his kingdom to a Roman province.[2] Unfortunately we have hardly any geographical details concerning these campaigns: nor are we able to determine with any certainty the limits of the Roman province of Dacia. But the site of Sarmizegethusa—which received a Roman colony and assumed the titles of Ulpia Trajana, but still continued to be known under its barbarous ancient name,[3]—is well established at Varhely, near the pass called the Iron Gate. Apulum also, on the site of the modern Karlsburg, became the centre of an important mining district, the gold mines of which were diligently worked by the Romans:[4] but with these two exceptions, no towns of any importance seem to have arisen in the country: and it is probable that the Roman authority was little more than nominal over a large part of the tract which in later times bore the name of Dacia. So far as we can discern, the conquests of Trajan were confined to Transylvania, with the adjoining district of the Banat, extending as far as the Theiss, on the west; and comprising the portion of Wallachia west of the river

[2] Dion. Cass. lxviii. c. 6–14; Eutropius, viii. 2; Aurel. Vict. *de Cæsaribus*. The death of Decebalus and reduction of Dacia to a province did not take place till the year 106. (See Clinton's *Fasti Romani*, vol. i. p. 92.)

[3] This is still found in inscriptions from the time of Trajan to that of the youngest Gordian. On these the city assumes the titles of Colonia Ulpia Trajana Sarmizegethusa.

[4] A curious proof of this is afforded by the discovery on several occasions of Roman tablets relating to the working of the mines, still retaining the original writing in a cursive character. They were first found in 1788 at a place called Veres Patak, near Abrud Banya, and have been since discovered in several neighbouring localities. (See Mommsen, *Inscr. Illyrici*, part 2, pp. 920–966.)

Aluta, between the Southern Carpathians and the Danube.[5] It was in order to secure the connection of the province thus constituted with the rest of the empire that Trajan built a stone bridge across the Danube, just below the celebrated rapids of the Iron Gates.[6]

§ 3. The successes of Trajan in the East were of a more brilliant character, though their effects were less durable. The power of the Parthian monarchy was undoubtedly far less formidable in his time than it had formerly been, and internal dissensions among rival competitors to the throne had broken its strength and cohesion. Trajan thus met with comparatively little resistance when, in A.D. 114, he turned his arms against the Parthians. The possession of Armenia was as usual the immediate cause of the dispute: and that country became the first prize of the conqueror, who, instead of placing on the throne a dependent king, according to the policy of his predecessors, at once annexed the whole kingdom as a Roman province. He soon followed up this advantage by the conquest of the northern part of Mesopotamia, as far as Nisibis and Singara; and the territory thus acquired was in like manner immediately constituted into a province.

The next year (A.D. 116) he crossed the Tigris into Adiabene, and made himself master of the whole of that country, which was in its turn formally annexed to the Roman Empire under the name of Assyria, after which he descended the Tigris with a fleet, took Seleucia, Babylon, and the Parthian capital of Ctesiphon, and thence sailed without opposition down the river

[5] The whole history of the province of Dacia—the latest addition to the Roman Empire, and the first to be abandoned—is very obscure: but it does not appear that it ever permanently exceeded the limits above defined. Neither the main part of Wallachia (east of the Aluta) nor Moldavia was ever brought under the regular dominion of Rome. The statement of Eutropius (viii. 2) that the new province was 1000 miles in circuit is an absurd exaggeration: but it seems to show that the *nominal* extent of the territory comprised within it was much larger than the part really occupied. See Note A. p. 516.

[6] Some remains of it are still visible at a place called Turn Severin, a few miles below Orsova. Its construction is described in detail by Dion Cassius, lxviii. c. 13.

to the Persian Gulf.[7] The statement that he navigated the Erythræan Sea and the Ocean is of course only to be understood of the Persian Gulf. But the stories of his desire to follow the example of Alexander, and of his fitting out a fleet for the conquest of India, sufficiently show the importance attached to this exploit: which he was certainly the first and last Roman Emperor to accomplish.

But this was the limit of his progress. His conquests had been too rapid to be secure, and he was now recalled to Mesopotamia, where the inhabitants of several of the newly-conquered cities had broken out into insurrection, so that he had to retake in succession Nisibis, Edessa, and Seleucia; all of which succumbed to his arms, but he was foiled in all his efforts to reduce the comparatively insignificant fortress of Hatra.[8] His death in the following year (A.D. 117) cut short his ambitious projects; and one of the first acts of his successor Hadrian was formally to abandon the three new provinces which had been annexed by Trajan—Armenia, Mesopotamia, and Assyria—and return to the old-established frontier of the Euphrates. But while Trajan's own conquests in the East were thus speedily given up, the Roman Empire received one permanent addition in this quarter, in the province which was dignified by the name of Arabia.[9] This included the districts south and east of Palestine, extending from the neighbourhood of Damascus to the head of the Ælanitic Gulf, and contained the two important cities of Bostra and Petra: both of which were

[7] Dion. Cass. lxviii. 26–29; Eutrop. viii.

[8] Hatra, which still retains the name of El Hadhr, is situated about 20 miles W. of the Euphrates, and 50 S. of Mosul. It was again besieged without effect by Sept. Severus in 199 (Herodian, iii. 9). Its strength was mainly derived from its position in the midst of deserts, which rendered the situation of the besiegers intolerable; but its fortifications themselves appear to have been of a formidable description. Its ruins were first visited and described by Dr. Ross in 1836. (See *Journal of Geogr. Soc.* vol. ix. pp. 467–470.)

[9] It had been subdued and annexed by the legate Cornelius Palma in A.D. 107 (Dion. Cass. lxviii. 14. See also Ammianus Marcellinus, xiv. 8, § 13). Damascus, which had hitherto nominally retained its native rulers, was at the same time formally incorporated in the Roman province of Syria. Palmyra also was probably annexed to the empire at the same period. In the time of Pliny, as we have seen, it was still independent.

at this period centres of a flourishing trade; which was carried on by caravans from Ælana on the Red Sea through Petra to Damascus and Palmyra.

§ 4. The reign of his successor Hadrian presented a great contrast to the warlike career of Trajan. During the twenty-one years that he occupied the throne (A.D. 117–138) he engaged in no military enterprises of any importance, and with the exception of some trifling hostilities with barbarian tribes on the frontiers, the empire was free from all external wars. On the other hand the administrative talents of Hadrian were of the highest order, and both in civil and military affairs the system that he introduced for the regulation of the empire continued with trifling alterations till the time of Constantine. The same inquiring spirit which led him to investigate for himself the minutest details of the administration, rendered him also desirous to visit in person all the different parts of the vast empire under his rule; and in pursuance of this design he is said to have visited in succession every province of the empire. But unfortunately the meagre accounts which are all that are preserved to us, do not enable us to follow his progress in detail. Nor indeed could it in any case possess much *geographical* interest: though it would doubtless contribute something to enable us to form a fuller and more correct picture of the Roman Empire.

We learn only that he commenced his "grand tour" in the year 120 by visiting Gaul, and the adjoining parts of Germany, from whence he passed over into Britain, where he devoted much attention to the affairs of the province, and marked his sojourn with a perpetual monument, by ordering the construction of a wall from sea to sea, extending from the mouth of the Tyne to that of the Solway.[1] We have seen that Agricola thirty years

[1] "Britanniam petiit in qua multa correxit, murumque per octoginta millia passuum primus duxit, qui barbaros Romanosque divideret." Spartianus, *Vit. Hadriani*, c. 11.

It is unnecessary here to enter into the various questions that have been raised by English archæologists in regard to the great work of the Roman Wall, of which such remarkable remains are still extant. I will content myself with expressing my entire concurrence

before had not only carried his arms into the wilds of Caledonia, but had occupied the narrow isthmus between the Clyde and the Forth with a continuous line of forts.[2] In abandoning this advanced line of defence, and falling back upon one more than sixty miles farther south, Hadrian was acting in accordance with the same cautious policy that had led him to abandon the newly-acquired provinces beyond the Euphrates, and disposed him to adopt the same measure in regard to Dacia also.[3] But his judgement was fully justified by the result—the Romans having never established more than a precarious and temporary authority beyond the line of the Tyne and Solway, while Hadrian's wall continued to oppose a formidable barrier to the incursions of the northern barbarians, until the final withdrawal of the Roman arms from Britain.

§ 5. The next year he returned to Gaul, and from thence proceeded into Spain, where he wintered at Tarraco, to which place he summoned a general assembly of deputies from all parts of the country. We do not learn however that he visited the more remote districts of Spain, with which he was perhaps already acquainted, being himself a native of that country.[4] But it was probably on this occasion that he crossed into Mauretania, a province that was still disturbed by frequent insurrections, but in which the presence of the emperor established tranquillity for a time. He now appears to have returned to Rome, but was soon called away to the East by the apprehensions of a war with Parthia, which he however succeeded in averting by negotiations and a personal interview with the Parthian king. Thence he returned through Asia Minor and the islands of the Ægean to Greece, where he visited Athens, and began the great series of splendid works with which he

with Mr. Collingwood Bruce and the other writers who consider the main structure of the wall itself to be the original work of Hadrian, as described in the above passage. The whole subject is fully examined, and all the ancient authorities brought together, by Hübner, in his *Inscriptiones Britanniæ Latinæ*, forming part of the Corpus Inscriptionum Latinarum, vol. vii. pp. 99–165.

[2] Tacit. *Agricola*, c. 23.

[3] Eutrop. viii. 6.

[4] He was born, like his predecessor Trajan, at Italica, near Seville. Eutrop. *l. c.*

adorned that city. He thence proceeded by sea to Sicily, where he ascended Mount Ætna, and then again returned to Rome. The next year he paid a visit to Africa, and in 130 set out again for the East. On this second journey he traversed the whole of Asia Minor, including Cappadocia, then passed through Syria and the Roman province of Arabia to Egypt, where he had the misfortune to lose his favourite Antinous, and did not finally return to Rome till the year 134. Throughout his peregrinations he not only bestowed the most minute care upon the organization and correction of administrative details, but he adorned a large part of the towns and cities which he visited with new works of public utility or ornament; which long continued to attest the benefit of his presence.[5] At the same time he appears to have visited all the interesting spots in each locality, and went through the prescribed routine of "sight-seeing" that was considered incumbent on the curious traveller. Thus we find him ascending Mount Ætna and Mount Casius in Syria in order to behold the sunrise, and gazing on the Euxine from what was supposed to be the same spot where Xenophon and his companions first caught sight of its waters.[6]

§ 6. The above meagre outline of the imperial travels is derived from the Augustan historian, Spartianus;[7] it is confirmed, and to a certain extent supplemented, by the evidence of coins, from which we learn that among the provinces which he visited in person were Bithynia, Phrygia, Cappadocia, Cilicia, Arabia, and Judæa; as well as the nearer regions of

[5] A summary review of the monuments and public works thus erected by Hadrian, most of which are known to us by extant inscriptions, will be found in Gregorovius (*Gesch. des Kaisers Hadrian*, pp. 200–223).

[6] This is attested by Arrian (*Periplus*, § 1) *καὶ τὴν θάλασσαν τὴν τοῦ Εὐξείνου ἅσμενοι κατείδομεν, ὅθενπερ καὶ Ξενοφῶν ἐκεῖνος καὶ σύ.* The spot was marked and the event commemorated by the erection of a statue of the emperor. Of course this proves nothing with regard to the identification of the real spot from which Xenophon and his companions first caught sight of the Euxine: it only shows that it was associated by tradition with a particular spot—probably that where travellers descending by the ordinary road to Trebizond first came in sight of the sea: and it appears certain that this was *not* the point where the interesting scene described in the Anabasis took place. See Note P to Chapter X.

[7] *Vit. Hadriani*, cc. 9–14.

Rhætia, Noricum, Mœsia, Dacia, Macedonia and Thrace. Such authorities can however obviously furnish no geographical details; nor do they supply any additional means of determining the chronological sequence or order of his visits to the respective provinces.[8]

An additional evidence of the diligence with which he sought for detailed information concerning the several provinces of his empire, as well as the neighbouring tribes and nations that adjoined its frontiers, is found in a little work that has accidentally been preserved to us, and which constitutes the only geographical memorial of his reign. This is the treatise commonly known as the PERIPLUS OF THE EUXINE SEA, which was composed by FLAVIUS ARRIANUS of Nicomedia, so well known for his valuable history of Alexander the Great. It differs essentially in character from all other writings of the same description, being in fact only a report or dispatch addressed by the writer in his official capacity to the emperor, not a regular treatise intended for the use of the public.

It appears to have been drawn up while Arrian was himself governor of the united provinces of Cappadocia and Pontus, in which capacity he thought it necessary to visit in person the part of his government adjoining the Euxine, and examine the condition of the Roman fortresses and outposts on its shores. In so doing he descended from the interior to Trapezus, and thence proceeded by sea to Dioscurias, then called Sebastopolis, which at this time constituted the farthest outpost of the Roman Empire in this direction. But having heard at the same time that Cotys, king of the Cimmerian Bosporus, was dead, and looking forward in consequence to the probability of the Emperor's interference in the affairs of that petty kingdom,[9] he collected information also concerning the

[8] Note B. p. 517.

[9] The relations of the kingdom of the Bosporus (the capital of which was Panticapæum) with the Roman Empire at this period, are well shown by its coins, which bear on the one side the effigies and titles of the successive monarchs: on the other the head of the reigning Roman emperor. A series of such coins is preserved from Augustus to Constantine.

coast and details of the voyage from Dioscurias thither, and completes the Periplus by giving a brief general account of the navigation along the northern and western shores of the Euxine, to the entrance of the Thracian Bosporus, as he had previously given a more detailed description of its southern shore from that point to Trapezus.[1]

§ 7. The document in question has therefore a kind of authority that can be claimed by few geographical records preserved to us from antiquity; and though, from its relating to a region so long familiar both to Greeks and Romans as the Euxine, it could not pretend to make any great addition to positive geographical knowledge, it is unquestionably one of the most accurate and authentic treatises of the kind that we possess. The analysis of the details would be foreign to the scope of the present work. But it is worth while to point out the state of geographical information that it indicates. Such a report, addressed to the emperor by one of the governors of his provinces, would have been wholly useless and uncalled for, had the Romans possessed anything like a geographical survey, or trustworthy map of the coasts of the Euxine. It contains in fact nothing more than a detailed Periplus of these coasts, giving the distances from point to point, with the names of headlands, rivers, &c., as well as towns. The bearings are very rarely given; and it is only in a few cases that he states the direct distance from one remote point to another. Of the general form and dimensions of the Euxine he tells us nothing, but these were doubtless supposed to be well known. He however departs from the erroneous notion so long entertained by the Greeks that Dioscurias was the extreme eastern point of the Euxine, and considers the Apsarus[2] as the limit in

[1] The Periplus of Arrian is inserted in Hudson's *Geographi Græci Minores*, vol. iii. as well as in the more recent edition of the same writers by C. Müller, Paris 1855. An English translation, with notes and dissertations, was published by Falconer at Oxford in 1805; but it is of little value from the defective character of the materials at his command for the modern geography of the Black Sea.

[2] The Apsarus is a small stream, which he places at 150 stadia west of the Acampsis, a large and navigable river, which we are enabled to identify with the Tchoruk Su, the only really

that direction, from whence the coast trends towards the north as far as the river Chobus, and from thence to Singames, where it turned slightly to the west as far as Dioscurias.[3] During the latter part of this voyage he tells us, he had a full view of Mount Caucasus, which he considered about the same height as the Celtic Alps. One of its summits, named Strobilus, was pointed out as that to which Prometheus was reported to have been attached; this may probably have been Mount Elbrouz, the highest summit of the whole chain, and which is conspicuous from this part of the coast.[4]

Arrian gives us no information as to the mode in which the distances were calculated, but there can be no doubt that, as in other similar cases, they were merely simple estimates. They will be found however in general to present a pretty close approximation to the truth: though he falls into the error so common among ancient geographers of reckoning the whole distance from one point to another as equal to the sum of the short distances between the intermediate points, so that while the details are pretty near correct the general results are considerably in excess of the truth.[5] It may however be admitted that he wrote, like the authors of other Peripli, solely with a view to navigators along the coast, not for the instruction of the geographical student. And regarded from this point of view it must be acknowledged that he has furnished us with a "Handbook to the coasts of the Black Sea" far exceeding in copiousness and accuracy of

important river on this part of the coast. It is described in more detail by Procopius (*B. G.* iv. 2. p. 567), who tells us that it was called Boas in the upper part of its course, and Acampsis in the lower.

[3] *Peripl.* c. 16. But though Arrian had the courage to deviate from the received tradition and form his judgement from his own observation, his conclusion is again slightly erroneous: the mouth of the Phasis, where the Romans at this time had a fortified station, being farther east than that of the Tchoruk Su or Acampsis.

[4] Ibid. The Caucasus, as is well known, exceeds the Alps in height: but to a passing observer the aspect of the two chains is strikingly similar.

[5] In regard to the Palus Mæotis, of which he speaks only from hearsay, he gives as usual a very exaggerated estimate of its dimensions, stating it to be 9000 stadia (900 G. miles) in circumference, § 29.

detail anything that was at the disposal of the modern navigator until quite recent times.[6]

§ 8. The long and peaceful reign of Hadrian's successor, Antoninus Pius (A.D. 138–161) presents scarcely any materials to the historian, and it is equally barren in respect to the extension of geographical knowledge. The frontier provinces indeed were not undisturbed, and the imperial generals found occasion to repress insurrections or hostile incursions on the part of the Moors, Germans, and Dacians. But the only one of these local wars which deserves a passing notice in this place, is that which was carried on in Britain by Lollius Urbicus. Unfortunately we are wholly without details concerning it; we know only that he waged war with the Caledonians, and that he departed from the policy of Hadrian in regard to the limits of the Roman province, and followed the example of Agricola in establishing the frontier between the Firths of Forth and Clyde; the isthmus between which he fortified with a continuous rampart or earthen wall from one sea to the other.[7] The construction of this is attested by the extant remains, as well as by numerous inscriptions.[8] But of his military proceedings we know nothing; and although it is probable that many of the Roman forts and fortified camps, of which the remains are still visible north of the barrier thus erected, may be ascribed to him rather than to Agricola, this is

[6] A glance at the map of the Euxine prefixed to the Dissertation of Falconer (4to. Lond. 1805) will show how far removed geographers were even at the commencement of the present century from a really accurate knowledge of the Black Sea. Throughout the dissertation itself the want of recent information to compare with the details furnished by Arrian is strikingly apparent.

[7] "Britannos per Lollium Urbicum vicit legatum, alio muro cæspiticio summotis barbaris ducto." Jul. Capitolin. *Antoninus Pius*, c. 5. This is all that we learn from history: the rest is supplied by the remains of the work itself, and by the inscriptions that have been found along the line, which are fortunately both numerous and instructive.

[8] These are all given, and fully illustrated by Hübner in the *Inscriptiones Britannicæ*, pp. 191–205. The definite character of the information they supply presents a marked contrast with that of the inscriptions found along the line of the wall of Hadrian. A full account of the remains of the work itself, and of the fortified camps along its line will be found in Stuart's *Caledonia Romana*, 4to. Edinb. 1845, chap. iv.

nothing but a mere conjecture.[9] We may surmise also that the increased knowledge of the northern parts of Britain displayed by Ptolemy, shortly after this time, was due in great part to the campaigns of Lollius; and that he actually carried his arms as far north as the Moray Firth, and even established a fortified station on its shores.[1]

§ 9. We hear nothing from the meagre historians of the period of any other military expeditions beyond the limits of the Roman Empire during this reign. But there can be no doubt that the long period of more than forty years during which the Roman Empire, under the successive rule of Hadrian and Antoninus Pius, enjoyed the advantages of peace and tranquillity, while it was at the very height of its power and extent, must have contributed greatly to the extension of its commercial relations with the surrounding countries; and that we are indebted in great measure to this source for the enlarged geographical knowledge of which we find such abundant evidence in the work of Ptolemy. Unfortunately we possess such very scanty information respecting the period in question, that we are wholly unable to trace in detail the progress of this extension, or to present anything like a complete picture of the relations of the Roman Empire, whether commercial or diplomatic, with the nations beyond their borders. A single circumstance, preserved to us from a wholly

[9] No Roman inscriptions have been found beyond the line of the rampart, except one at Ardoch, about 20 miles north of the Vallum of Antoninus, where there are extensive remains of a Roman camp, and this affords no evidence of its date. The attempts to illustrate the ancient topography of this part of Britain, and to assign names to the forts and stations of which remains are still extant, which have been made in the work of Stuart (quoted in the preceding note) and in the earlier work of General Roy (*Military Antiquities of the Romans in Britain*, fol. Lond. 1793) are unfortunately altogether vitiated by the reliance placed by both writers on the work ascribed to Richard of Cirencester, the spurious character of which is now universally acknowledged.

[1] This is the πτερωτὸν στρατόπεδον (Ptol. ii. 3, § 13) a name obviously a translation of the Roman Castra Alata —which would appear by the latitude and longitude assigned to it to have been situated somewhere on the Moray Firth. No notice of such a place is found in any other writer, and the Latin form Alata Castra is not found in any ancient author, though introduced into modern maps on the authority of the spurious Richard of Cirencester.

different quarter, reveals in a striking manner the existence of such relations to an extent that we should otherwise have little expected. This is the fact, recorded by the Chinese historians, of the arrival at the court of the Chinese emperor Hiwanti in A.D. 166, of an embassy from Antun, king of Tathsin, the name by which the Roman Empire had long been known to the Chinese.[2] There can therefore be no doubt that the name of Antun is no other than Antoninus, and that the embassy in question must have been dispatched by the emperor Marcus Aurelius shortly after his accession to the throne. This curious notice tends at once to explain and to confirm the evidence afforded by the work of Ptolemy, composed about the same time, of a widely extended acquaintance with these remote regions of Eastern Asia, though of a very imperfect character.

To the same period also must apparently be referred the expeditions of the two Roman generals, Septimius Flaccus and Julius Maternus, into the interior of Africa; but as the scanty information that we possess concerning them is derived wholly from the brief notice of them by Marinus of Tyre, their consideration will best be reserved for the next chapter.

[2] See Colonel Yule's *Cathay and the Way thither*, vol. i. p. lxii. I must refer my readers to the same authority for an account of the knowledge previously possessed by the Chinese of the great empire in the far west, of which they had much the same sort of vague idea that the Romans and Greeks had of China. "There were few people who succeeded in reaching so remote a region" remarks one writer, in almost the very words employed by the author of the Periplus in regard to Thinæ.

NOTE A, p. 505.

DACIA.

THOUGH the name of Dacia was applied by the Romans in a much wider sense, the part of the country which was permanently occupied by them seems practically to have been almost confined to Transylvania. Throughout the western part of that province Roman inscriptions and antiquities are found in considerable numbers, while scarcely any occur beyond its limits. The broad marshy plains of Hungary (east of the Theiss), and those of Wallachia on the south were probably still occupied by pastoral and nomad tribes, and never became the abode of any more permanent settlers.

Our knowledge of the geography of the Roman province is derived only from Ptolemy (iii. 8), together with three lines of route given in the Tabula Peutingeriana; the Antonine Itinerary furnishing no routes in Dacia. But considerable assistance has been derived from inscriptions, and the evidence of existing remains; and the researches of local antiquarians have enabled them to determine some points with a reasonable degree of certainty. The most northern of the places thus fixed is Porolissus, the site of which is placed at Mojgrad, in the extreme north-west corner of Transylvania, on the slope of the Carpathians towards the plains of Hungary. The main line of route led thither from Sarmizegethusa (Varhely) through Apulum (Karlsburg), Potaissa (Thorda) and Napoca (Klausenburg), all of which may be considered as satisfactorily determined. Another line of road led from the Danube up the valley of the Aluta, and across the pass of the Vulkan, into Transylvania, where it joined the preceding route at Apulum. The occurrence of a place called Castra Trajana on this line of road (Tab. Peut.) renders it probable that this was the line of advance followed by Trajan during his second campaign; and a milestone bearing his name found near Thorda shows that the Roman arms were carried in his reign into the very heart of Transylvania. But it was not till a later period that Apulum, Napoca and Porolissus were raised to the dignity of Roman colonies.

The inscriptions found in Dacia are fully collected, and their bearings on the geography of the country, as well as the adminis-

tration of the province, ably discussed by Mommsen in the Corpus Inscriptionum Latinarum, vol. iii. part 1; a work in which he has made use of all the materials collected by local authorities, and which may be considered as altogether superseding those of earlier writers on the same subject.

Ptolemy describes Dacia as bounded by the Tibiscus (Theiss) on the west, and extending as far as the Hierasus on the east; a name not found in any other author, but which may probably be identified with the Sereth, a considerable river, that flows into the Danube a short distance above its confluence with the Pruth. It is singular that the name of the latter river, though known to Herodotus, is not found in Ptolemy. The strip of country west of the Theiss, intercepted between that river and the Danube, was in the time of Ptolemy still occupied by an independent tribe of Sarmatian origin, whom he terms the Jazyges Metanastæ (iii. 7), evidently in order to distinguish them from the more important people of the same name, who were still found on the northern shores of the Euxine, adjoining the Roxolani. But the period of their emigration, and the occasion of their establishment in this region are wholly unknown.

It is one of the most curious facts in the ethnography of Europe that while Dacia was one of the latest provinces added to the Roman Empire and one of the earliest given up (having been finally abandoned by Aurelian in A.D. 270), the inhabitants should have retained the use of the Latin language, and continued to speak a Latin dialect down to our own times. Nor is this confined to Transylvania and the regions which we know to have been really occupied as a Roman province, but extends over the whole of Wallachia, as well as Moldavia, which (so far as we know) was never occupied by the Romans at all.

NOTE B, p. 510.

TRAVELS OF HADRIAN.

The coins relating to the travels of Hadrian may be divided into three classes. 1. Those commemorating his arrival in each province or city, which are inscribed with "ADVENTUI AUG." followed by that name. These exist for Africa, Alexandria, Arabia,

Asia, Bithynia, Britannia, Cilicia, Gallia, Hispania, Italia, Judæa, Macedonia, Mauretania, Mœsia, Noricum, Parthia, Phrygia, Sicilia and Thracia. 2. Those which celebrate his munificent care in restoring and improving the administration of each province, by giving him the title of its "restorer," as "RESTITUTORI ACHAIÆ," &c. These are found for Achaia, Africa, Arabia, Asia, Bithynia, Gallia, Hispania, Italia, Libya, Macedonia, Nicomedia, Phrygia, and Sicilia; while another of the same series proudly designates him as "RESTITUTOR ORBIS TERRARUM." 3. Those which represent the emperor at the head of a portion of his army, with in each case the corresponding designation of the troops to which it refers. Thus we find "Exercitus Britannicus, Cappadocicus, Dacicus, Germanicus, Hispanicus, Mauretanicus, Mœsiacus, Noricus, Ræticus, and Syriacus." The first and third class obviously attest the actual presence of the emperor in the provinces to which they refer; and the same may be fairly assumed of the second class also. The coins with ADVENTUI AUG. PARTHIÆ could only be meant to commemorate the emperor's visit to the Parthian king. It was an obvious stretch of flattery to apply the same expression to this as to the other *provinces*. A fourth class, in which only the name of the province is found (as Ægyptos, Africa, Mauretania, &c.), with a symbolical figure representing it, can hardly be considered as having any direct reference to the visit of the emperor; as similar coins of Britannia, Cappadocia, Mauretania, &c., were struck in the reign of his successor Antoninus Pius, who never travelled at all.

It is unfortunate that these coins, like the greater part of those of Hadrian, omit to mark the year of the Tribunitian power, which would have enabled us to assign each to its proper year. (See Eckhel, *Doctrina Nummorum Veterum*, vol. vi. pp. 486–501; Cohen, *Médailles Impériales*, tom. ii. pp. 172–180, &c.; Gregorovius, *Gesch. des Kaisers Hadrian*, pp. 25–44. The little work of Greppo, *Mémoire sur les Voyages de l'Empereur Hadrien*, Paris, 1842, contains no additional information.)

CHAPTER XXVII.

MARINUS TYRIUS.

§ 1. To the period that we have just been considering—that from Pliny to Ptolemy—belongs a work, unfortunately now lost to us, but which must unquestionably have formed an important contribution to the progress of geography. The treatise of MARINUS of TYRE is known to us, like that of Eratosthenes, only at second hand; but unlike the eminent writer just mentioned, the very name of the Tyrian geographer would have been unknown to us had it not been for the criticisms and references of his successor Ptolemy. The exact period at which he flourished is therefore unknown: we can only infer from the manner in which Ptolemy speaks of him as "the latest writer *of his time*,"[1] who had devoted himself to the collection of geographical facts, that he was very nearly contemporary with the geographer of Alexandria, and the same conclusion may also be derived from the very considerable extension of geographical knowledge which he displays, as compared with Pliny and other writers of the preceding age. Such an extended acquaintance with distant lands, far beyond the limits of the Roman Empire, could hardly arise from anything but the wider commercial relations, which had naturally grown up during the long period of peace and tranquillity that marked the age of the Antonines. Ptolemy himself must have composed his great geographical work before

[1] ὕστατος τῶν καθ' ἡμᾶς. Ptol. i. 6, § 1. The force of this expression seems to have been overlooked by those modern writers who place Marinus at the *beginning* of the second century, or nearly half a century before Ptolemy. M. Vivien de St. Martin even assigns him to the last twenty years of the first century (*Le Nord de l'Afrique dans l'Antiquité*, p. 214); a conclusion which appears to me utterly at variance with the statement of Ptolemy, and I know of no other authority.

the end of that period, and that of Marinus must apparently have been published not very long before. We are told indeed, and the circumstance serves to show the diligence and zeal with which he applied himself to his task, that he published three successive editions of his geographical treatise, the last of which appears to have been left in a somewhat incomplete state.[2] But it is to this last that Ptolemy especially refers, and which, notwithstanding the faults that he points out, both in its general plan and in particular details, he admits that he took for the general basis of his own work.[3]

Under these circumstances it is almost impossible for us, in the absence of the original treatise of Marinus, to determine either the precise degree of merit to which he is entitled for the advances that he made in geographical science, or the full extent of the obligations which Ptolemy owed to the work of his immediate precursor. We must content ourselves with briefly pointing out those instances in which we are distinctly informed that the greatly increased knowledge displayed by Ptolemy was directly derived from the work of Marinus, and indicating still more briefly the general outline, as well as the leading errors and defects of his geographical system. Some of the latter, as we shall see, were adopted by the Alexandrian geographer, and through his means perpetuated down to modern times.

§ 2. It is clear that Marinus did not attempt to present his readers with a complete body of descriptive geography, such as was furnished by the comprehensive work of Strabo. His object, like that of Eratosthenes at an earlier period, was simply to correct and reform the map of the world,[4] so as to

[2] This is clearly implied in Ptolemy's statement that he had not been able to complete the map to accompany this last edition (*διὰ τὸ μὴ φθάσαι κατὰ τὴν τελευταίαν ἔκδοσιν, ὡς αὐτός φησι, πίνακα καταγράψαι.* Ptol. i. 17, § 1). But I cannot understand how Letronne and Wildberg can come to the conclusion that the preceding editions also were unaccompanied by maps. The contrary inference seems to be the natural meaning of Ptolemy's words.

[3] i. 6.

[4] *διορθῶσαι τὸν γεωγραφικὸν πίνακα.* See Chapter XVI. p. 619. It would even appear, from the manner in which

adapt it both to the increased knowledge of distant countries, and to the improved state of mathematical science, which were possessed in his day. But as he seems to have been fully aware of the imperfect condition in which the latter still remained, and of the very deficient data that existed for the foundation of a sound mathematical geography, he devoted himself more especially to the collection of all existing materials, such as were furnished him by the statements of earlier authors combined with, and corrected by, the itineraries and information which he was able to collect from merchants and other travellers in his own day.[5] The diligence with which he brought together all these available materials, as well as the critical sagacity which he displayed in their application, and the candour with which he corrected in the later editions of his work what he himself considered as errors in the previous editions, are extolled in the highest terms by Ptolemy, who even states that if it were not for certain errors into which he had fallen, as well as for the imperfect condition of the latest edition of his work, he should have himself adopted it without further investigation as the basis of his own labours.[6] As it is, we may probably infer that, in almost all cases where we have no indication to the contrary, the materials from which the Alexandrian geographer drew his conclusions were furnished to him by his Tyrian predecessor.

§ 3. The leading points on which Ptolemy felt himself called upon—and undoubtedly with justice—to depart from the conclusions of Marinus, affected the determination of those cardinal conditions in constructing a map of the world, according to the ancient notions of geography,—the length and breadth of the inhabited world. We have seen that on this subject the views of Eratosthenes had been adopted with little alteration by subsequent geographers, down to the time of Strabo, and though Artemidorus and others had given measure-

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Ptolemy refers to the work of his predecessor (i. 6, § 1), as if the very title of his work indicated this as its object; but it was, at all events, the scope and purpose of the whole.

[5] Ptol. i. 6, § 1. [6] Ibid. § 2.

ments differing more or less from those of Eratosthenes, the discrepancy was not such as to give rise to any material alteration in the general outline thus established. But in the interval between the time of Strabo and that of Marinus discoveries had been made which necessitated a great change in the existing maps, and opened the eyes of geographers to a vast extension of the two great continents of Africa and Asia, towards the south and east, far exceeding what had previously been suspected. Marinus was, as far as we know, the first to embody the information thus obtained in his geographical work, and apply it to the correction of the maps previously received. But in doing so he was unfortunately misled, either by the natural disposition to exaggerate new discoveries, or by a misconception of the authorities on which he relied, to give such an enormous and undue extension to the geographical results which he deduced from them, as to convert these real additions to existing knowledge into gross exaggerations, and distort the newly constructed map of the world with errors as great as those of his predecessors, though of a directly opposite character.

§ 4. The first of these great alterations—that affecting the breadth of the inhabited world—was based mainly upon the result of two expeditions made by Roman generals into the interior of Africa, of which we know nothing, except from the notice of them by Marinus on this occasion, but concerning which he appears to have obtained some trustworthy information, or what he himself regarded as such.

We have seen that the Roman arms had been carried during the reign of Augustus (B.C. 19) as far as the land of the Garamantes, the modern Fezzan;[7] and though the Roman Emperors never attempted to establish their dominion over the country, they appear to have permanently maintained friendly relations with its rulers, which enabled their officers to make use of the oasis of the Garamantes as their point of

[7] See Chapter XX. p. 184.

departure from which to penetrate farther into the interior. Setting out from thence, a general named Septimius Flaccus, who was at the time governor of the province of Africa, "arrived at the land of the Ethiopians after a march of three months towards the south." Another commander, named Julius Maternus, apparently at a later date, setting out from Leptis Magna, proceeded from thence to Garama, where he united his forces with those of the King of the Garamantes, who was himself undertaking a hostile expedition against the Ethiopians, and their combined armies, "*after marching for four months towards the south*, arrived at a country inhabited by Ethiopians, called Agisymba, in which rhinoceroses abounded."[8]

§ 5. This very scanty notice contains all the information that has been preserved to us in regard to the expeditions in question, which would have been such important and interesting additions to the history of African exploration, had we possessed any details concerning them, or any means of verifying or correcting their results.[9] In the absence of all such assistance, we must be content to acquiesce in the conclusion, which there is no reason to doubt, that the Roman commanders succeeded in crossing the Great Desert, and arrived at the land of the Ethiopians, as they termed the country beyond it—now known as Soudan or Negroland. But it is impossible to determine the particular point reached, or the district designated as Agisymba.[1] Had they pursued a course due

[8] Ptol. i. 8, § 5. The concluding phrase in the original, *ἔνθα οἱ ῥινοκέρωτες συνέρχονται*, is very singular, as if the rhinoceroses used to congregate at some appointed place, like the inhabitants of a given district in the agora of their chief town.

[9] We are unfortunately also left wholly in the dark as to the date of these remarkable expeditions. M. Vivien de St. Martin is compelled by the date that he assigns to the work of Marinus to refer them to the first century after Christ; but it is far more probable that they belonged to the first half of the succeeding century, during which (as we have seen) many causes combined to give a fresh stimulus to geographical inquiry. They must certainly have been subsequent to the time of Pliny, as it is impossible to suppose that that writer would have left them unnoticed.

[1] The difficulty is increased by the vague and uncertain manner in which Ptolemy himself employs the term. In the first passage, where he is citing the account given by Marinus, pro-

south from Fezzan, this would have brought them to the Lake Tchad, and the region now forming the kingdom of Bornou. But so remarkable a natural feature as this great lake could hardly have failed to be noticed: and the absence of all mention either of a lake or great river would seem to prove that the part of Soudan which they reached must have been intermediate between the Lake Tchad on the one side and the Niger (Quorra or Joliba) on the other.[2]

Nor is there anything improbable in the time assigned for the duration of the march. Caravans at the present day take more than two months on the journey from Mourzuk to the Lake Tchad,[3] and an army would necessarily occupy a still longer time. It is difficult indeed to understand how any considerable force could have been supplied with water upon such a march, but Marinus himself pointed out that they were often obliged to take long and forced marches in order to reach places where there were wells.[4] Such exertions however in the case of a long continued march invariably require corresponding periods of repose; and the day's marches of a caravan are frequently very short. It seems incredible that any geographer accustomed to compute distances from itineraries should have allowed himself to regard these three or four months as if they had been all days of continuous marching at a rapid rate. Yet this is what Marinus appears to have done, and thus arrived at the conclusion that Agisymba was situated not less than 24,680 stadia, or 2468 geographical miles *south of the equator!* This result was indeed so startling that he felt himself compelled to diminish the distance *by rather more than one-half* (!)—a sufficiently bold proceeding—and thus to reduce it to 12,000 stadia—a conclusion which would

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bably in his very words, he calls Agisymba a district or territory of the Ethiopians (ἀφίκεσθαι εἰς τὴν Ἀγίσυμβα χώραν τῶν Αἰθιόπων, i. 8, § 5). But he elsewhere (iv. 9, § 5) speaks of it as an extensive country, stretching far along the borders of the unknown land, and seems to employ the term as co-extensive with Southern Ethiopia.

[2] Ptolemy himself remarks that there is no reason to assume their line of march to have been always *due south*, and gives this as a reason for curtailing its extension *in latitude*.

[3] See Note A, p. 637.

[4] Ptol. i. 10, § 2.

place Agisymba nearly on the southern tropic.[5] As the northern boundary of Soudan is really situated in about 14° north latitude, or nearly in the same parallel with that already well known to Greek geographers as passing through the Land of Cinnamon and the territory of the Sembritæ, the error still remains one of astounding magnitude, which in the absence of the original authorities and of all details it is hard to understand or explain. At the same time, as Ptolemy justly observes, there was no reason for this enormous reduction of his original result, which would not have justified the reducing it still farther.[6]

§ 6. It is singular that the Tyrian geographer found, as he considered, a confirmation of this extraordinary conclusion in another calculation, wholly independent of the preceding, but in fact equally erroneous. According to this, the Promontory of Prasum, on the east coast of Africa—the most southerly point of that continent with which he was acquainted—was distant not less than 27,800 stadia to the south of the equator; a statement which, as Ptolemy points out, would place it in 55°¾ *south* latitude, or as far to the south of the equator as the regions beyond the Palus Mæotis were to the north of it.[7] This astonishing conclusion was derived, like the preceding one, from a false calculation from facts in themselves not without interest. We have seen in our examination of the Periplus of the Erythræan Sea that in the days of its author the Greek merchants already navigated the Indian Ocean along the east coast of Africa as far as a place called Rhapta, and it is evident that such voyages continued to be made more and more frequently. One of these navigators, named Diogenes, after having passed Cape Aromata (Guardafui), was carried away by a strong northerly wind, and driven along the coast of the Troglodytes for twenty-five days, until he reached "the lakes from which the Nile flows," which were but little to the north of the promontory of Rhapta.[8] Again, another

[5] Ptol. i. 8, § 3.
[6] Ibid. 9, § 6.
[7] Ibid. 8, § 2.
[8] Ptol. i. 9, § 1. The mention of "the lakes from which the Nile flows"

navigator, named Theophilus, on his return from Rhapta was carried away in like manner by a south wind, and reached Cape Aromata in twenty days.[9] These voyages appear to have been selected by Marinus on account of their continuous character; in the second case, it appears that it was estimated by Theophilus himself that he made out 1000 stadia in each day and night's voyage, and hence Marinus arrived at the conclusion that the distance of Rhapta from Cape Aromata was not less than 20,000 stadia. The promontory of Prasum he placed "many days' voyage" to the south of Rhapta, though a certain Dioscorus (otherwise unknown) was cited as stating that the distance was only 5000 stadia.[1]

There is here some confusion or error which we are unable to explain, as the distances here given would not carry the position of Prasum near so far south as the original statement given by Ptolemy; but it is of little consequence, as it appears that Marinus himself thought it necessary to curtail this distance also, as he had done that of Agisymba, and to just about the same extent, so as to bring the two upon the same parallel, or 24 degrees south of the equator. Such a proceeding was in both cases entirely arbitrary, and is justly censured by Ptolemy as such, though he himself has recourse to much the same expedient. In point of fact, the error in this case (though very great) was much less than in regard to Agisymba, the position of Rhapta, which (as we have seen),[2] must have been situated on the coast somewhere opposite to Zanzibar, being really about 6° south of the equator, and therefore not less than twenty degrees of latitude south of the frontier of Soudan, or the supposed position of Agisymba. That of the promontory of Prasum, which is here mentioned for the first time, but continued to be regarded by Ptolemy and his successors as the southern limit of the known world, is very obscurely indicated. It is identified by D'Anville and

in this passage, in connection with the voyage along the east coast, is very startling and perplexing. We shall return to this point hereafter.

[9] Ptol. i. 9, § 1. [1] Ibid. §§ 3, 4.

[2] See Chapter XXV. p. 454.

other modern writers with Cape Delgado, an important headland about 5 degrees south of the supposed position of Rhapta; a suggestion that appears plausible enough, but must be admitted to be no more than a conjecture.[3]

§ 7. While Marinus thus extended the limits of the known world towards the south, he acquiesced in the received opinion as to its extension towards the north, adopting as its limit in this direction the parallel through the island of Thule, which he conceived as passing to the north of the continent of Europe, so that there was continuous sea in this direction. There can be no doubt that the island which he designated by this name, as well as his successor Ptolemy, was in fact the group of the Shetlands; the position of which, at a considerable distance to the north of the Orcades, had in his time come to be a recognized fact in geography.[4] But we have no information as to the grounds which induced him to place this parallel in 63° north latitude, or, according to the system adopted both by him and Ptolemy, at a distance of 31,500 stadia from the equinoctial line.[5] Combining this assumption with that of the southern limit of Africa in 24° south latitude, he arrived at the conclusion that the total breadth of the inhabited world was not less than 87 degrees of latitude.

§ 8. But if Marinus added thus largely to the previously received estimates of the breadth of the world, he extended its supposed length in a still greater proportion. Its limit to the west was indeed so clearly marked by nature, that no considerable change was here possible. Marinus had however the merit of pointing out that the Fortunate Islands, situated in the Atlantic Ocean, lay considerably to the west of the meridian

[3] The arguments brought by Mr. Cooley against this identification (*Claudius Ptolemy and the Nile*, p. 88) do not appear to me at all conclusive: but there is no proof either way. In any case it was placed much too far south of Rhapta.

[4] We have seen that Thule was supposed to have been *seen* by the fleet of Agricola during its voyage round the north coast of Britain (Chapter XXVI. p. 492). What they *did* see could obviously only be the Shetlands: it remained for the geographers to assign it a position in accordance with their system.

[5] Ptol. i. 7, § 1.

passing through the Sacred Promontory of Spain, which had hitherto been regarded as the westernmost extremity of the world, and that two degrees and a half of longitude must be added on this account to the calculation of its total length.[6] Hence he appears throughout his work to have reckoned his longitudes, in the same manner as was done by Ptolemy after him, from the supposed meridian of the Fortunate Islands. Nor did he introduce any material change in estimating the length of the Mediterranean Sea. We have seen that this was calculated by Eratosthenes at 26,500 stadia,[7] a result exceeding the truth by rather more than one-fifth. Marinus (who is followed in this part of his work by Ptolemy) appears to have reckoned only 24,800 stadia along the parallel of 36°, or, as it was commonly called by Greek geographers, the parallel of Rhodes—from the Strait of the Columns to Issus. But from the erroneous principle of graduation which he had adopted, he considered this distance as equivalent to not less than 62 degrees of longitude, instead of about 51½ degrees, which it really represents,[8] and thus added an error of more than 10 degrees to the length of the Mediterranean, as it appeared on his map. Proceeding from thence eastwards, he prolonged this parallel, much in the same manner as had been done by Eratosthenes and Artemidorus before him, across the Euphrates and Tigris to Ecbatana and the Caspian Gates; thence to Hecatompylos in Parthia, and through Hyrcania, Aria and Margiana to Bactra. But with regard to the distances on this line of route, as well as its prolongation still farther eastward, he possessed materials, which he considered as superior to any that had been accessible to preceding geographers.[9]

[6] Ptol. i. 12, § 11. Of course the addition thus made was in reality wholly *inadequate*: the meridian of Ferro, the westernmost of the Canary Islands, being nearly 9 degrees of longitude farther west than the Sacred Promontory. But it was a step in the right direction.

[7] See Chapter XVI. p. 634.

[8] Ptol. *l. c.* For the examination of the details on which this conclusion is founded see the next chapter.

[9] It is a fortunate accident—for when we consider the number of uncertain *data* upon which it is based, we can hardly call it anything else—that the position of Bactra, the last really *known* point along this fundamental parallel,

§ 9. We have already seen how considerable a trade had been established by the Romans under the Empire, with the silk-producing countries of Eastern Asia, or the Land of the Seres, as they termed it. This trade was evidently carried on by two principal caravan routes: the one leading directly from China itself through the whole extent of Chinese Tartary to the great range of the Bolor or Pamir, and the frontiers of Bactria; the other crossing the Himalayas into India and descending to Palibothra and the Indian ports, from whence it was again transmitted to the Greek and Roman merchants. The existence of this second channel of communication is clearly pointed out by the author of the Periplus,[1] and was evidently an important branch of trade in his day. But it is probable that already at a much earlier period, the trade in silk was carried on, to some extent at least, by the overland route through Central Asia: and the extension of the Chinese dominions to the chain of the Bolor[2] must have contributed greatly to facilitate and promote it. The first distinct notice of it that we find, is that of Marinus, but this refers to the trade as one already well known and established. Among the merchants who carried it on was one named Maës, of Macedonian origin, but who was also known by the Roman name of Titianus, who compiled an itinerary of the route followed in his day by traders, from the passage of the Euphrates to the city of Sera, which was regarded as the capital of the Seres.[3] But this itinerary, though adopted by Marinus as his chief authority for the route in question, and consequently for the position of Sera, was not the result (as he tells us himself) of the personal observations of Maës, but of the statements he collected from the travelling agents that he employed;[4] and

was so very nearly the truth. The city of Balkh is actually situated in 36° 40′ N. lat. or less than 15′ north of the true latitude of Rhodes. The correctness of such an important point in the very heart of Asia was a material advantage towards the geographical arrangement of the whole continent.

[1] See Chapter XXV. p. 476.

[2] See Colonel Yule's *Cathay and the Way thither*, vol. i. p. liv.

[3] Ptol. i. 11, § 7.

[4] Μάη γάρ φησί τινα . . . συγγράψασθαι τὴν ἀναμέτρησιν, οὐδ' αὐτὸν ἐπελθόντα, διαπεμψάμενον δέ τινας πρὸς τοὺς Σῆρας, *l.c.*

it may well be doubted whether any of these had themselves penetrated as far as Sera.

§ 10. Yet some portion of the information thus collected is curious and interesting. The route in question lay through comparatively well known regions as far as Bactria; though both Marinus and Ptolemy adopt the measures thus furnished which were given in *schœni* or parasangs—as if they were of more authority than any others they possessed.[5] But from Bactria to the frontiers of the Seres, the line of route was one wholly unknown to former geographers, and which was very imperfectly known even in modern times down to our own day. The course taken appears to have been—so far as can be gathered from the account as preserved by Ptolemy, which unfortunately is far from clear—at first to the north-east as far as the western foot of the mountain country of the Comedi (the Bolor?), then across or through this mountain country till they came to a deep valley or ravine, "ascending which one came to a place called the Stone Tower, from whence the mountains trended away towards the east, till they joined the chain of the Imaüs, which extends upwards towards the north from Palibothra."[6] Imperfect as is this account, it certainly seems to point to a route lying across the great chain or rather watershed of the Pamir, and the Stone Tower was doubtless erected for the purpose at once of marking and protecting the passage. But the indications are too vague to admit of any more precise determination, and the distances, which were given by the author in *schœni*, have unfortunately not been preserved to us.[7]

But from this point a complete change takes place in the nature of the information on which Marinus relied. Thus far,

[5] Ptol. i. 11, § 4.

[6] Id. i. 12, § 9.

[7] Recent explorations have, however, done much to improve our acquaintance with the regions in question; and, according to Colonel Yule the position of the Comedi can be definitely fixed by the assistance of the Chinese authorities in the districts now known as Darwaz and Roshan; both of them on the upper course of the Oxus. It would therefore appear that the route in this part ascended the valley of that river (see *Proceedings of Geographical Society* for 1877, p. 137). But its nearer identification may safely be pronounced hopeless, from the utter vagueness of the *data* furnished us by Ptolemy.

an itinerary had been given which stated the distances in *schœni* from one principal point to another, the last of these, a distance of 50 *schœni* (1500 stadia), being reckoned to the Stone Tower, apparently from the beginning of the ascent of the mountain range.[8] The vagueness of this mode of computation and the erroneous results that would follow from regarding them as in all cases equal to 30 stadia, have already been pointed out,[9] but still they afforded some kind of approximation to the truth, and Ptolemy justly regards them as furnishing a basis for the construction of a map, after being subjected to certain corrections. But with regard to the remainder of the route from the Stone Tower to Sera, all that Maës had been able to collect was that it was "a seven months' journey" from the one to the other, and we are expressly told that he furnished no details of any kind concerning it.[1] The conclusion appears irresistible that his own agents had not themselves performed the journey, but had received the silk at the Chinese frontier from traders of the country, who would naturally give vague and exaggerated accounts of the distance from which their goods were brought.

Yet, strange as it may seem, Marinus appears to have fallen into the very same error in regard to this distance as he had done with respect to the interior of Africa—that of accepting the seven months as if it had been a definite statement of the number of days actually employed in travelling, and computing from thence the distance traversed at the rate of so many stadia per day. He thus arrived at the enormous result that the distance from the Stone Tower to the city of Sera was not less than 36,200 stadia, or 3620 geographical miles;[2] and in

[8] Ptol. i. 12, § 8.

[9] See Chapter VIII. p. 300, and Chap. X. Note B, p. 360. Marinus, like Isidore of Charax, evidently employed the name of *schœni* as equivalent to parasangs.

[1] Ptol. i. 11, § 8. This is justly referred to by Ptolemy himself as a proof of the exaggeration of the distance assigned (*ἐνταῦθα δὲ καὶ τὸ μηδὲν ἄλλο κατὰ τὴν τῆς ἑπταμήνου διάνυσιν ὑπὸ τῶν ὁδευσάντων ἱστορίας τινὸς ἢ μνήμης ἠξιῶσθαι τερατείαν ἐμφαίνει περὶ τὸ τοῦ χρόνου μῆκος*).

[2] Ptol. i. 12, § 1. From the expression of Ptolemy—*τὸ πλῆθος τῶν ἐκ τῆς ἑπταμήνου στἀδιασμοῦ συναγομένων σταδίων*—it seems certain that this was actually the mode of computation employed by Marinus, preposterous as it may appear.

laying this down on his map he appears to have assumed that the direction was due east, so that Sera lay (according to his computation of 500 stadia to a degree) more than *ninety* degrees of longitude (!) east of the Stone Tower.[3] He came to the conclusion also—upon what grounds we know not, and it is difficult to imagine what foundation he had for the statement—that the Stone Tower was situated in the same latitude with Byzantium (which according to his system he placed more than seven degrees north of the parallel of Rhodes), while Sera was nearly on the same parallel with the Hellespont, about two degrees farther south.[4]

§ 11. But while the conclusion thus arrived at by Marinus was vastly in excess of the truth, and the attempt to assign a definite position in latitude and longitude to a city concerning which he possessed such vague information as Sera was utterly futile, it must be admitted that he was the first among ancient geographers to recognize the fact of the vast extension of the continent of Asia to the east of the Bolor range and the confines of Bactria, which in the time of Strabo still formed the limit of geographical knowledge in this direction.[5] It is remarkable that in this case also he found a confirmation of this important addition to the geography of his predecessors in the corresponding extension which recent discoveries in the Indian Ocean enabled and (in his opinion) authorised him to give to the southern coasts of Asia, and the regions which were included by the Greeks under the general name of India.

We here again find him pursuing very much the same course, and falling into the same errors, as in regard to his

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[3] Ibid. Ptolemy, who reduces this to one half, reckons it 45½°; so that Marinus must have made it equal to 90½°. He, therefore, evidently reckoned a degree of longitude in this parallel of latitude as equivalent to 400 stadia or 40 G. miles.

[4] Ibid. Ptolemy justly points out that this difference of latitude in itself renders it clear that the course was not on a direct parallel; and that allowance must be made for this. But the error resulting from this cause would be utterly insignificant, when applied to distances such as those supposed by Marinus.

[5] See Chapter XXII. p. 285.

parallel drawn through the centre of Asia. In both cases he really possessed information, though of a very vague description, representing the real fact of a great extension of continental Asia towards the east, beyond what was known, or even suspected, by earlier geographers. But the vagueness of this information, and the utter want of any trustworthy means of correcting it, led him to commit errors of the grossest description in the attempt to apply it to the construction of his supposed map of the world. These errors were the more inevitable in the case of the southern coasts of Asia, because their very peculiar configuration rendered it impossible to apply to them the names and distances, which were all that was furnished by merchants and navigators, without understanding the real relations of the places to which they referred.[6]

§ 12. We have already seen, in the examination of the Periplus of the Erythræan Sea, that at the period to which that document is to be assigned—probably about half a century before Marinus—the Greek traders were well acquainted with the coasts and ports of India down to the tract now known as Malabar, while their knowledge of the eastern coasts from Cape Comorin to the mouth of the Ganges was extremely vague and indefinite, and beyond that great river they could not be said to have any geographical information at all. A great change had however taken place in this respect before the time of Marinus. Not only did that author possess what he considered as trustworthy details, as far as the southernmost headland of the peninsula of India, to which he gave

[6] The want of correct bearings, always one of the greatest difficulties with the ancient geographers, would in this case be absolutely fatal. If the geographical student were at the present day to attempt to lay down a map of the south-eastern portion of Asia, possessing correct distances by sea from point to point, but with no indications of bearings or courses, the result would probably be something curiously different from the real conformation of the coast.

Marinus, however, in this instance did possess, in a rough and general way, some account of these bearings: but unfortunately these were utterly erroneous, or had been so expressed by his informants as to lead to erroneous conclusions.

the name of Cape Cory, and described it as opposite to the island of Taprobane, and separating the Colchic and Argalic Gulfs;[7] but he went on to give the names, distances, and bearings, of a number of points extending far away to the eastward, and implying a great extent of country in that direction, wholly unknown to previous geographers. Imperfect and erroneous as this information really was, it was not superseded by any other until a comparatively late period; and although his successor Ptolemy was able to make considerable additions to the facts collected by Marinus, and to correct his conclusions on some points of detail, he cannot be considered as having carried his real geographical knowledge beyond the limits attained by his predecessor.

Starting from the Promontory of Cory, which both he and Ptolemy regarded as a well-established point, concerning which there was no dispute (though their idea of its position was in fact very erroneous), he stated that this was followed by a gulf, to which he gives the name of the Argaric, having an extent of 3040 stadia, as far as a city called Curula, situated to the north-east of Cape Cory. From thence the course of navigation lay to the south-east, for a distance of 9450 stadia, as far as a place called Palura, which he regarded as the commencement of the great Gangetic Gulf,[8] the circumference of which he estimated at 19,000 stadia, while the distance across it in a direct line, from Palura to a place called Sada was 13,000 stadia, in a direction from west to east. Again, from Sada to the city of Tamala was 3500 stadia towards the

[7] It must be borne in mind that, as we have seen in examining the Periplus, Cape Cory did not correspond to Cape Comorin—the real southern extremity of India—but was a headland considerably to the north-east of it, bounding the gulf called by ancient geographers the Colchic Gulf. But as this was the point directly opposite to Ceylon, and the nearest to it, and it was always assumed that that island lay due south of India, it was considered as a natural inference that Cape Cory was the southernmost point of the peninsula.

[8] i. 13, §§ 5, 7. The recognition of the existence of this great gulf was in itself an important step in the geographical knowledge of these countries, which was apparently first made by Marinus. The author of the *Periplus* had evidently no distinct notions upon the subject.

south-east, and from Tamala to the Golden Chersonese 1600 stadia more, still in the same direction.

Thus far we have no distinct indication of the authorities upon which Marinus relied: but beyond this point he appears to have had no other account than that of one Alexander—otherwise unknown, but probably himself a trader—who gave no estimates of distance, but stated vaguely that from the Golden Chersonese *the coast faced the south*—that is to say, ran from west to east—for a distance of twenty days' voyage, as far as a city called Zabæ, from whence the course lay to the eastward of south for a voyage of "some days" as far as a place called Cattigara, apparently an emporium of some importance, as it appears to have been the object, as well as the limit, of the mercantile voyages in this direction.[9]

§ 13. The *periplus* of the Indian Ocean to the east of Cape Comorin thus presented to us is curious and interesting, if it be only as proving that the ancient navigators in those days frequented the coasts beyond the Bay of Bengal, and had acquired a knowledge of the countries of south-eastern Asia far beyond what had been previously attained. Nor can it be reasonably doubted that such definite statements as those given by Marinus rested upon some real basis of fact, however difficult it may be at the present day to discover and interpret it. The attempt to reconcile them with the existing geography of these countries, and identify the particular localities named, may indeed be fairly pronounced to be hopeless. It is remarkable that not one of the names here mentioned—after quitting the Argaric Gulf—is to be found in the Periplus of the Erythræan Sea; and on the other hand, none of the names given in that document are to be found in this notice of Marinus. Hence no assistance can be derived from a comparison of the two; while the apparent confirmation of them by the re-appearance of the same names in Ptolemy loses all value, when we consider that that author confessedly based

[9] Ptol. i. 14, § 1.

this portion of his work for the most part on the materials furnished by Marinus. It would appear, indeed, distinctly that the later author had no *geographical* data (in the strict sense of the word) upon which to rely, beyond those of his predecessor, and in correcting the construction of his map he is compelled to have recourse to mere arbitrary amendments, without appealing to fresh measurements or observations.

It must be admitted—if we can trust to the criticisms of Ptolemy—that the use made by Marinus of the new materials at his disposition was in the highest degree unskilful and unscientific. He appears to have taken the distances furnished by his informants and added them up together, as if they were all along the same parallel, though he himself had reported that the course was in some instances to the north-east, in others to the south-east. By this means he necessarily added materially to the distance in longitude between Cape Cory and the Golden Chersonese, and carried the latter far too much to the east, even according to the statements furnished by himself. But still more extraordinary was the manner in which he dealt with the very imperfect data that he possessed concerning the distance from the Golden Chersonese to Cattigara, the remotest point of which he attempted to determine the position. Here, as we have seen, he had no information beyond the general statement that it was twenty days' voyage from the Chersonese to Zabæ, along a coast facing to the south, and that the course from thence to Cattigara was to the south-east for "a voyage of some days;" a strangely vague expression, but which Marinus (if we may accept the statement of Ptolemy) interpreted still more strangely as meaning a voyage of *many* days' duration, and actually assumed, *upon this authority*, that the distance of Zabæ from Cattigara was greater than that from the Golden Chersonese! Such a mode of dealing with his authorities appears incredible, without some explanation which Ptolemy has not furnished us. It appears not improbable that one motive which induced Marinus to give this enormous extension to the lands in the south-east of Asia,

was in order to bring its easternmost extremity into the same longitude as that in which he had already placed Sera. That Cattigara, the farthest point known to him from his maritime itineraries, was situated nearly on the same meridian with the capital of the Seres—the most easterly *inland* city with which he was acquainted—appears to have formed a settled point in his geographical system; and we have seen in many instances how readily the Greek geographers were always disposed to make the facts accord with their preconceived conclusions.

§ 14. The result derived by Marinus from these calculations was to place Cattigara at a distance of not less than 100 degrees of longitude, or nearly 50,000 stadia, east of Cape Cory; and as he placed that promontory in 125½ degrees of east longitude, measured from the meridian of the Fortunate Islands, he arrived at the conclusion that the total length of the inhabited world was, in round numbers, 225 degrees, equivalent, according to his calculation, to 112,500 stadia. As he adopted the system of Posidonius, which gave only 180,000 stadia for the circumference of the globe, he thus made the portion of it which he supposed to be known to extend over nearly two-thirds of the whole circumference. His position of Cape Cory, which was adopted by Ptolemy as a point well established, was already nearly 34 degrees too far to the east;[1] but it was by giving the enormous extension we have pointed out to the coast of Asia beyond that promontory, that he fell into this stupendous error, which, though partly corrected by Ptolemy, was destined to exercise so great an influence upon the future progress of geography.

§ 15. There can be little doubt, though it is not distinctly stated by Ptolemy, that Marinus, in common with his successor,

[1] Cape Cory is placed by Ptolemy (i. 14, § 9), who on this point apparently follows Marinus, in 125° E. longitude; it is really situated 80° east of Greenwich, or 98° east of Ferro; but as Ptolemy made a fundamental error in the position of his primary meridian of nearly 7°, this must be added to the amount of his error in this instance. He himself states (*l. c.*) that Cape Cory was 120° east of the mouth of the Bætis; the real difference of longitude being only 86° 20′.

adopted the view entertained by Hipparchus, but which had been generally rejected by the geographers of the intermediate period, according to which the known portions of the earth, instead of being surrounded on all sides by the ocean, were connected by unknown lands, so that the Atlantic and Indian Oceans were separated from one another and had no mutual connexion. Nor does he seem to have admitted the existence of a sea to the east of Asia, but attributed to that continent an indefinite and unknown extension towards the east.

We have unfortunately no information as to the reasons that induced him to depart from the sounder views of Eratosthenes and Strabo upon this fundamental conception of geography. But it is a plausible conjecture that it was the great extension in the knowledge of distant lands revealed by recent discoveries—an extension supposed to be much greater than it really was—that led readily to the belief of other lands still unknown; while the greatly increased dimensions which the continents of Asia and Africa assumed upon the map of the world in consequence of these discoveries rendered it much more difficult to accept the hypothesis of a continuous ocean extending around them. So long as Africa was supposed, as it had been by earlier geographers, to extend but a few degrees south of the land of the Sembritæ and the mouth of the Red Sea, and not even to approach to the equator, it was easy to believe in its circumnavigation, as at least a geographical possibility, if not as an established fact. But when it was found that the continent stretched away for twenty and thirty days' voyage to the south of Cape Aromata, and that even when navigators had reached (as they supposed) as far as the southern tropic there was still no end of the land, it was not an unnatural reaction to assume its indefinite extension, and refuse to believe in the old notion of its peninsular character.

Much the same thing must have taken place with regard to Asia. Vague as were the notions concerning China and the lands beyond the Ganges which had come to be received as

admitted facts, they were sufficient to show that that great continent had an extent far beyond what had been dreamt of by earlier geographers, and that the hypothesis, so long accepted as an established truth,[2] of an eastern ocean, sweeping round at once from the mouth of the Ganges to the northern shores of Scythia and the opening of the Caspian Sea, was utterly erroneous and impossible. Hence it seemed not unreasonable to assume that no such ocean existed at all, and this belief led systematic geographers to adopt the bold hypothesis which found favour with Ptolemy, and connect the extreme points that were then known of Africa and Asia by a supposed line of coast extending continuously from the one to the other.

§ 16. Still more unfortunate for the cause of geographical science was the view taken up by Marinus upon another of its fundamental principles, in regard to which he in like manner departed from the sounder views that had before been generally adopted, and in which also he was followed by his successor Ptolemy. We have seen that the measurement of the earth's circumference by Eratosthenes, though sanctioned by the great authority of his successor Hipparchus, and generally adopted by subsequent geographers,[3] had not been universally recognized, and that Posidonius had instituted a separate investigation, the result of which was to reduce the circumference of the globe to only 180,000 stadia, or less than three-fourths of that determined by Eratosthenes.[4] According to this calculation, of course the length of a degree of latitude, or of longitude at the equator, was reduced from 700 to 500 stadia; and this conclusion was adopted both by Marinus and Ptolemy, and made the basis of the graduation of their maps. While the result obtained by Eratosthenes was about a seventh part in excess of the truth—the real number of stadia in a

[2] We have seen that this view, though in fact based upon nothing but mere conjecture, continued to be received without inquiry from the time of Eratosthenes till that of Strabo. See Chapter XXII. p. 286.

[3] See Chapter XXIV. p. 380.

[4] See Chapter XVIII. p. 96.

degree being just about 600—that of Posidonius fell short of it by one-sixth: so that, far from mathematical geography having made any real progress in this respect in the interval between Eratosthenes and Ptolemy, the great Alexandrian astronomer was actually content to base his whole system upon a calculation considerably wider of the truth than that followed by his predecessors nearly four centuries before.

§ 17. But the consequences of this error in the geographical works of Marinus and Ptolemy were far greater than they would otherwise have been, from the attempt which they made to give to their treatises a strictly scientific character. It was of comparatively little importance in the comprehensive work of Strabo what measurement he assumed for a degree, because, as we have already seen, after discussing the principles of mathematical geography in his two first books, he lays the subject wholly aside, and never attempts to correct the statements of distances, or determine the configuration of the countries he describes, by reference to latitudes and longitudes. With Ptolemy, and to a great extent with Marinus also, the case was directly the contrary. So far as we are able to judge, in the absence of his work itself, Marinus confined himself, as did Ptolemy after him, almost entirely to the collection of the materials necessary to the preparation of a more complete and satisfactory map of the world (as well as separate maps of its subordinate divisions) than had hitherto been possible; and the execution of this task, in anything like a scientific manner, was necessarily dependent throughout upon his first conceptions of mathematical geography.

§ 18. We have seen that Hipparchus had long before conceived the idea of a map of the known world, based on strictly scientific principles, in which every locality of importance should be laid down according to its latitude and longitude, these being determined in every instance by astronomical observations. But such a conception, while it does honour to his sagacity as a theoretical philosopher, was in his time utterly impossible to execute in practice; and the intervening

centuries—while they had added much to the extension of geographical knowledge, so far as a general acquaintance with distant countries and previously unknown regions, as well as to more accurate notions of the physical geography and configuration of the lands already known—had contributed very little to such a basis of scientific observation as Hipparchus had justly seen to be the indispensable requisite for accurate geography. From the time of the great astronomer indeed the idea seems to have been practically laid aside, and Marinus appears, so far as we know, to have been the first to take it up again. He was undoubtedly well aware of the imperfect character of the means at his command, and could not hope to realize even in an approximate degree the conception which he proposed to himself; but he thought, and justly thought, that by keeping this object steadily in view, and making use of all such materials as he could bring together to assist in forming an improved picture of the earth's surface, of the configuration of its lands and seas, and the position of the most important cities, he would succeed at least in producing a map of the world surpassing any of those that had been framed by his predecessors. Nor can it be doubted that the attempt was to a considerable extent crowned with success. Great as were the errors into which he fell in regard to the more distant and unexplored regions with which we have just been dealing, it must be admitted that his map of Europe, and the parts of Asia and Africa adjoining the Mediterranean, as well as of a considerable portion of the interior of Asia, displayed a decided advance upon all that had preceded it.

§ 19. It is especially in regard to this portion of his geographical work that Ptolemy, as he himself tells us, has adopted the conclusions of his predecessor in almost all cases, where he has not thought it necessary to point out his departure from them.[5] We must therefore in general regard the extant work of Ptolemy, as representing, so far as the positive geo-

[5] i. 19, § 1.

graphical data are concerned, the results of the labours of Marinus, and based upon his conclusions in the absence of later and more authentic information. But in regard to the form, and arrangement of his materials, the work of Marinus appears to have been far inferior to that of his successor. Ptolemy repeatedly finds fault with its multifarious character, and with the manner in which it was divided into separate portions, containing the discussion of different parts of the subject, the conclusions of which were not always consistent with one another. Thus he discussed the longitudes in one part of his work, and the latitudes in another; an arrangement, as Ptolemy points out, very inconvenient for any one who wished to lay down on the map the position of any given place or country.[6] But it must be remembered that Marinus had in the first instance to bring together his various materials from a number of different sources and discuss the results to be derived from them; and it can hardly be doubted that by far the greater part of his work was occupied with such discussions, before he was able to present the results to his readers in a definite form. Ptolemy on the other hand found the materials accumulated by Marinus ready to his hand, and was content in most cases to accept his conclusions without further enquiry. It was therefore comparatively easy for him to present the results thus assumed in a more scientific form, and one at the same time more convenient for the ordinary student.

It must be admitted, moreover, that the very definite and symmetrical form in which these materials were arranged by Ptolemy, and the apparent precision of his results, has a strong tendency to conceal from his readers the imperfect nature of the foundation on which they rested: while the minute and multifarious discussions in which Marinus appears to have indulged, could not but throw much light upon the true character of his authorities, and would doubtless have

[6] Ptol. i. 18, § 4.

revealed to us, had they been preserved, the sources and origin of many of the errors in Ptolemy's great work, which at present appear unaccountable. As it is, the few sections of his first book in which the later geographer discusses some of the conclusions of his predecessor, and explains his reasons for differing from him, are of vital importance in enabling us to judge of his mode of arriving at his own results, and to estimate at their true value the specious, and apparently definite, statements with which he has filled the rest of his work.

§ 20. In another respect also the work of Marinus was certainly inferior to that of his successor. His mode of constructing his map was still of a very rude and simple description. He was content to draw his parallels of latitude and meridians of longitude as straight lines at right angles with each other: taking at the same time the parallel of 36°—that passing through the Strait of the Columns and the Island of Rhodes—as the foundation of his map, and setting off the degrees of longitude along this, according to their due proportion to those of latitude—without attempting to preserve the correct proportion along the other parallels.[7] Such a map was of course mathematically incorrect, but, in regard to the countries surrounding the basin of the Mediterranean, the error would not be very considerable, while in respect to the more distant countries to the north and south, the geographical information possessed either by Marinus or Ptolemy was not sufficiently accurate to render the error arising from this course of any material importance. It would rather appear indeed that Marinus had himself taken this view of his subject, as, according to Ptolemy, he criticised all previous attempts at representing the spherical surface of the globe on a plane map, and yet acquiesced in the use of the most imperfect of all.[8] Yet this method was the same employed by Ptolemy himself in regard to all his maps of particular countries: and though of course its errors would be greatly magnified when applied to

[7] Ptol. i. 20, §§ 4, 5.

[8] Id. ibid. § 3.

the whole surface of the habitable world, Marinus may still have thought—as was really the case—that these errors would be trifling, when compared with those resulting from imperfect information and inaccurately reported distances. Such was the conclusion arrived at by Strabo,[9] and though the more accurate mathematical mind of Ptolemy enabled him to supply improved methods of delineating the earth's surface, his theoretical skill was so far in advance of his material knowledge, that the improvement of the resulting map from this cause was really of comparatively little significance.

§ 21. It would be a waste of time to attempt to enter into a detailed examination of the results attained by Marinus, or the positive advances which he made in geographical knowledge. Ptolemy, as has been already stated, freely admits that he made the work of his predecessor the basis of his own, and adopted all his conclusions where he had no especial reason for deviating from them. But as he has certainly not indicated in all cases such deviations, or pointed out where he possessed additional information, it is impossible for us to discriminate between what is really due to Marinus and what belongs to his successor. It will therefore be the safest course, as well as the most convenient, to reserve all such examination for the still extant work of Ptolemy, merely noticing in passing those particular points in which he has specially referred to that of the Tyrian geographer.

Whatever may have been the real merits of the work of Marinus, there can be no doubt that he was singularly unfortunate in being followed almost immediately by a writer of so great and well-earned a reputation as Ptolemy, who, besides bringing to the task a far greater amount of mathematical and astronomical knowledge, arranged the materials that he found collected, in so convenient and at the same time (in appearance at least) so scientific a form, as to suit the requirements of all ordinary students. The effect appears to have been so com-

[9] See Chapter XXI. p. 232.

pletely to supersede the work of the Tyrian geographer, that his name is not even mentioned by any subsequent writer, and we should never have heard of his existence had it not been for the candid manner in which Ptolemy himself admits his obligations to his obscure predecessor. The work of the great Alexandrian astronomer, on the other hand, early established a paramount authority in the field of geography also, and was regarded with a blind reverence which it in reality little deserved. Its real merits were great, but it was doubtless owing in great measure to its external form and arrangement, as well as to the period at which it was produced, that its author obtained a position as marked, and an influence as durable, in regard to the future progress of geography as to that of astronomy.

CHAPTER XXVIII.

PTOLEMY,

PART 1.—*His Geographical System.*

§ 1. CLAUDIUS PTOLEMÆUS, more commonly known by the familiar appellation of PTOLEMY, was a native of Egypt, and lived and wrote at Alexandria about the middle of the second century of the Christian era. These few words comprise all that we know concerning the man who has left one of the best-known names of antiquity, and whose scientific writings exercised an influence over succeeding centuries second only to that of Aristotle. No other particulars of his life are recorded to us on any trustworthy authority: the statement that he was born at Pelusium appears to be erroneous,[1] but the point is one of little consequence. It is far more important to determine as nearly as possible the period at which he flourished, and at which his great works were produced. Here also we are wholly in want of any definite external information: but as Mr. De Morgan observes, "an astronomer always leaves his date in his works," and it is certain that he made observations in A.D. 139; and that his great astronomical treatise is subsequent to that date.[2] It may be considered certain also that he survived the Emperor Antoninus Pius, who died in A.D. 161;[3] and as his geographical work was certainly subsequent to the

[1] It is derived only from a misconception of an epithet applied to him by many of his Arabic commentators or followers. (See Forbiger, *Geographie*, vol. i. p. 492.)

[2] See the article PTOLEMÆUS by Mr. De Morgan, in Dr. Smith's *Dictionary of Ancient Biography*, vol. iii. p. 570.

[3] The death of Antoninus is mentioned in the chronological work of Ptolemy called Κανὼν Βασιλείων; the authenticity of which is not disputed; and though such tables were always liable to additions from subsequent editors, there is no reason to suspect such an interpolation in this case.

completion of his main astronomical one,[4] we cannot be far wrong in assigning it to the latter part of the reign of Antoninus, or to about A.D. 150–160.

§ 2. We have already had occasion, in discussing the work of Marinus of Tyre, to point out the obligations which Ptolemy owed to that author, and the relations which they bore to one another. It is altogether unjust to stigmatise Ptolemy as a plagiarist, or to charge him, as some modern writers have done, with plundering his predecessor,[5] because he made use of the materials which had been accumulated by Marinus, and put them into a more scientific, as well as more convenient shape. Every writer on geography since the time of Eratosthenes had contributed something to the extension of the knowledge of the Inhabited World, as it was termed by the Greeks, but the additions and alterations thus made in the general outline of the map were, as we have already seen, comparatively inconsiderable in the interval between Eratosthenes and Strabo; and the map of the world, as conceived by the latter geographer, was still substantially the same, in its leading features and general dimensions, as that of Eratosthenes nearly three centuries before. But the case was very different with the century that followed the age of Strabo. Many causes, as we have seen, were at work to promote the extension of geographical science, and there were certainly not wanting writers to register the new facts thus recorded, and add them to the domain of knowledge previously acquired. The very terms in which Ptolemy refers to Marinus as the latest, as well as the most diligent, of those writers who, "within his own time," had devoted themselves to the compilation of geographical information,[6] show that there had been

[4] He himself refers to his great astronomical work by the name of *Μαθηματικὴ σύνταξις* (the title which it bears in the original, though more commonly known as *Μεγάλη σύνταξις*) in the eighth book of his geography (c. 2, § 3). Moreover in the second book of the same work (the Almagest as it is commonly termed) he distinctly intimates his intention of composing a geographical work in which he would indicate the positions of the principal places on the earth's surface by their latitudes and longitudes.

[5] See the article PTOLEMÉE by Malte Brun in the *Biographie Universelle.*

[6] *Δοκεῖ δὴ Μαρῖνος ὁ Τύριος ὕστατός τε τῶν καθ' ἡμᾶς καὶ μετὰ πάσης σπουδῆς ἐπιβαλεῖν τῷ μέρει τούτῳ.* i. 6, § 1.

a long succession of such writers, down almost to the date at which Ptolemy himself took up the task of co-ordinating the mass of materials thus collected into a systematic and organic whole.

§ 3. To this task indeed Ptolemy devoted himself much more in the spirit of an astronomer than of a geographer in the higher sense of the word. No trace is found in his work of such a physical description of the world, or of the different countries comprised in it, as the true geographer should propose to himself, or of a sense of the importance of mountain chains, rivers, lakes, and inland seas, as not only determining the configuration of countries, but influencing their climates, their natural productions, and the condition of their inhabitants. In this respect Strabo was greatly his superior, and indeed stands alone among ancient writers, far as is even his work from fulfilling the requirements of modern geographical science. What Ptolemy undertook was merely "to reform the map of the world,"[7] not only by the addition of what had been unknown to his predecessors, but by the application to it throughout of a more scientific system, based upon sound astronomical principles. He took up again, in fact, the idea which had been long before put forward by Hipparchus, but which that great astronomer did not attempt to realize from a sense of the utter inadequacy of his materials. Ptolemy was more confident; and though he did not disguise from himself the deficiency of the means at his command, and the impossibility of executing his task in a really scientific manner, he appears to have thought that he could bring to the work resources greatly exceeding those of his predecessors, and should be able to attain to results sufficiently satisfactory to justify his having made the attempt.

§ 4. In proposing to himself the task of reforming the map

[7] In the opening sentence of his treatise (i. c. 1, § 1) he describes geography in terms which would seem to limit it solely to the art of drawing a map of the world, in conformity with the strict etymology of the name. This is well pointed out by Wildberg in his notes on the passage: "Ptolemaeo geographia est ars delineandi tabulas geographicas;" and throughout his first book the same conception will be found to prevail.

of the world as it previously existed, he was only undertaking what had been before attempted, with more or less success, both by Eratosthenes and by his own immediate predecessor Marinus, as well as in a less degree by many other geographers.[8] But the method to which he had recourse was one entirely new. Adopting the scientific conception of Hipparchus that a map of the world could only be laid down correctly by determining the latitude and longitude of all the principal points on its surface—a method of which his own knowledge of astronomy led him fully to appreciate the value—he was at the same time well aware that in order to attain such a result it was necessary that all such positions should be determined by direct astronomical observations. Unfortunately, the number of such observations at his command was so small that it would have been utterly impossible to construct a map based on these materials. Hence he was compelled to have recourse to the same method as had been pursued by preceding geographers for the determination of the leading positions on his map, by calculating and comparing itineraries, rendering days' journeys and voyages into stadia, and other such rough methods as have been employed by geographers in all ages when they have had to lay down maps of countries for which they had no proper scientific materials.

But the great peculiarity in Ptolemy's mode of treating the problem before him is, that having thus succeeded in producing such a map as circumstances admitted of—the best that, according to his judgment, he was capable of producing—he proceeded to give a strictly scientific form to that which did not really rest upon any scientific basis. While the positions of the places on his map were in reality determined for the most part only by such methods as have been pointed out, he treated them as if they had been really laid down

[8] *διορθῶσαι τὸν ἀρχαῖον πίνακα* was, as we have already seen (Chapter XVI. p. 619), the special object proposed to himself by Eratosthenes; and the same words are applied by Ptolemy to the task undertaken by his predecessor Marinus. (See Chapter XXVII. p. 520.)

according to their observed latitudes and longitudes, and not only assigned them their places on the map accordingly, but drew up copious tables, giving distinctly, in degrees and parts of a degree, the latitude and longitude of every place on his map.[9] His work thus assumed *in form* the very character of what Hipparchus had looked forward to as the ultimate *desideratum* in geography; and it was only on a careful investigation that it would be found how far it fell short in reality of that ideal.

§ 5. It need hardly be observed, that by far the greatest part of the work of Ptolemy—six books out of the eight of which it is composed—consist almost entirely of such tables. They contain, in fact, the materials out of which his own maps were constructed, and from the convenience and regularity of their form, they have the great advantage of enabling any careful student to construct anew for himself similar maps, which would correspond with and represent the views of the author. It is one of the leading faults for which Ptolemy censures the work of his predecessor Marinus, that he had not presented the results of his inquiries in a form suitable for this purpose; and there can be no doubt that it was this merit which greatly contributed to the extensive popularity of Ptolemy's own work, and to the lasting influence that it acquired. Such maps were constructed in all ages upon the bases laid down by the Alexandrian geographer; the problem being one—especially

[9] It has been already pointed out that Hipparchus was the first to divide the circle into 360 parts or degrees, a division which Ptolemy adopts as if it were generally recognized, though he has no specific or technical term answering to a degree; and he is obliged frequently to have recourse to the phrase "parts, of which there are 360 to the equator" in order to explain clearly what he means, though he more usually terms them simply "parts" (μοῖραι).

In his tables he introduces subdivisions of the degree down to a twelfth, or five minutes (according to the modern phrase), but no further. This was, indeed, quite as great a degree of accuracy as it was possible to attain to in his day, and in most cases a great deal more.

It may be added that either Ptolemy or Marinus (it is impossible for us to say which) was the first to employ the terms μῆκος and πλάτος in their technical sense of *longitude* and *latitude*, which have been retained in use ever since, though they have long lost all trace of their original signification, in connexion with the length and breadth of the known world.

in regard to the local maps of separate countries—within the reach of the most ordinary geographical student.

§ 6. But it has been already observed that the very definite and positive form in which Ptolemy thus presented his conclusions to the reader, was in itself calculated to disguise the true nature of these statements, and conceal the fact that they were in reality nothing more than the approximate results arrived at by a comparison of authorities, of distances given by itineraries, of the reports of voyagers, and other such materials, corrected frequently in a very summary and arbitrary manner to suit with his own preconceived opinions. Thus, to take a single instance, we find him stating in his introductory criticism of Marinus,[1] that Ptolemaïs Epitheras on the Red Sea was "ten or twelve days' journey" to the east of Meroë (the position of which was assumed to be well known), and that the Straits between Ocelis and Deirè lay at a distance of 3500 stadia to the east of "Ptolemaïs and the Adulitic Gulf" (which he therefore assumed to be approximately on the same meridian), and that Cape Aromata lay 5000 stadia still farther to the east. In this case we have evidently the materials furnished us (though in a very general form) upon which he based his conclusions. But we find these facts represented in the tables in the following manner. Taking the longitude of Meroë as 1° east of Alexandria, he places Ptolemaïs 4½° (that is to say, according to his mode of computation, 2250 stadia) to the east of it. Adulis, which appears in the passage just cited as if it were on the same meridian with Ptolemaïs, is carried a whole degree more to the east; Deirè is placed 7½°, or about 3600 stadia, east of Adulis, and Cape Aromata again 8½°, or 4,080 stadia, to the east of the Straits. Passing over for the present the minor discrepancies, and admitting that in the first passage he was speaking in general terms, it is impossible not to see that his information was far from being precise and accurate. But

[1] i. 15, § 11.

the ordinary reader, referring merely to his tables, and finding there the longitudes of the places in question laid down in degrees and half degrees,[2] would have nothing to show him that these were not the results of positive observation, like the positions assigned on modern maps to the Strait of Bab el Mandeb or Cape Guardafui.

But this is not all. Between Deirè (a point that can be identified with certainty as Cape Bir, from its being described as a city and promontory just without the Straits) and Cape Aromata, he enumerates in succession five trading stations, or *emporia* (as he terms them), then the headland of Mount Elephas, then another emporium, before coming to that of Aromata itself. All these names, with one exception, are found in the Periplus, and in the same sequence. There can be no doubt that Ptolemy, in laying down this part of his map, must have been guided by some such authority as our still extant Periplus, and the close agreement of the two is a strong confirmation of their substantial correctness.[3] But it is almost certain that any such authority would only have given the distances from point to point, in days' voyages, or, which is substantially the same thing, in distances estimated from the number of days. When, therefore, we find the ports and places in question enumerated in order, with the latitude and longitude affixed to each, as if it had been separately determined in each case, it is important to bear in mind that this is only a mode of expressing in a scientific form the conclusions which Ptolemy drew from the statements of his

[2] The longitudes are thus given in his tables:—

Alexandria . .	60° 30′
Meroë . . .	61° 30′
Ptolemaïs . .	66°
Adulis . . .	67°
Deirè . . .	74° 30′
Cape Aromata .	83°

The longitudes are here reckoned, according to the usual practice of Ptolemy, from the supposed meridian of the Fortunate Islands, though they were without doubt really calculated from Alexandria. In this case, as in almost all others, where he had little detailed information, he does not carry his subdivision beyond half degrees. In writing them as above, I have merely employed the mode of notation common in modern times, as more convenient to the reader.

[3] At the same time the discrepancies between the two are sufficient to show that it was not our existing Periplus that was followed by Ptolemy.

authority, and that it has no more claim to scientific accuracy than those original statements expressed in the popular language, and according to the rough modes of computation of the ordinary trader.[4]

§ 7. But this is precisely what has been too often lost sight of. The blind, and almost superstitious, reverence, with which Ptolemy was regarded throughout the Middle Ages, has descended in some degree to our own days: and it is not uncommon to find writers referring to his statements, as if his *apparently* definite and scientific results must necessarily be based upon definite information and scientific calculation. Yet it is certain that he possessed no materials that could enable him to arrive at any such conclusions. It has been well remarked of him, as of the Greek writers in other instances, that their theoretical development of science far outstripped their power of its practical application.[5] He saw clearly the true principles upon which geography should be based, and the true mode in which a map should be constructed. But the means at his command did not enable him to carry his ideas into execution; the substance did not correspond to the form; and the specious edifice that he reared served by its external symmetry to conceal the imperfect character of its foundations and the rottenness of its materials.

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[4] His mode of computation was in fact precisely analogous to that which any modern geographer would employ, where he had no more definite information. Thus (to take a single instance), Lieut. Cruttenden, after surveying the north-eastern coast of Africa, and laying down the position of its ports from actual observation, fixes the position of Hurrur—a town in the interior, which he had *not* visited—as follows: "It is eight days' journey for a kafila of camels from Zeyla to Hurrur, and nine days' from Berbera, and this would place it in about latitude 9° 22' N. and longitude 42° 35' E." (*Journ. of Geogr. Soc.* vol. xix. p. 51). Here the modern geographer is careful to indicate the process by which he has arrived at his conclusion. Ptolemy would simply have inserted it in his tables with the latitude and longitude thus arrived at, and there would have been nothing to indicate that these did not rest upon the same basis as those of Zeyla and Berbera, which were derived from actual observations.

[5] Cooley's *Claudius Ptolemy and the Nile*, p. 47. Mr. Cooley's examination of Ptolemy's method and principles is thoroughly satisfactory; and his views concerning the real value of his positions are those at which every unprejudiced student of that celebrated author must necessarily arrive. But I dissent altogether from the conclusions he has drawn with respect to the special subject of the Nile.

§ 8. It would however be altogether unjust to Ptolemy to hold him responsible for the exaggerated estimate that has been too often formed of the true value of his geographical positions. In his first book, which forms a general introduction to the whole, he has been careful to warn his readers of the imperfect means that a geographer possessed in his day for the execution of the task, which he proposed to himself, from the great scarcity of astronomical observations. After some very judicious remarks upon the mode of making use of the itineraries of travellers for geographical purposes, and the corrections necessary in their application, he points out the defective character of such materials in any case, unless based upon, or corrected by, astronomical observations. He then proceeds to say: "This being so, if the persons who had visited different countries had made any such observations, it would have been possible to have constructed the map of the world in a manner that would admit of no dispute. But since Hipparchus alone, and that in the case of a few cities only, in comparison with the vast multitude of those that must find a place in a general map,—has transmitted to us the elevations of the north pole, (i.e., observations of latitude) and the positions of places under the same parallels; and a few of those who have written since his time have added notices of certain places situated opposite to each other, not as being at equal distances from the equator, but simply as being on the same meridian—a fact which is established by the voyage from one to the other being a straight course before a north or south wind; while the distances from one place to another have for the most part been reckoned only in a rough and general way, especially those from east to west, not so much from the carelessness of those who reported them, as from their want of mathematical skill, and the small number of simultaneous observations of lunar eclipses at different places that had been duly recorded—like that which was seen at Arbela at the fifth hour and at Carthage at the second (from which it would be seen how many equinoctial hours the places were distant from

each other towards the east or west): [taking into consideration all these things,] the correct course would be for any person attempting to draw up a map of the world, to lay down as the basis of it those points that were determined by the most correct observations, and to fit in to it those derived from other sources, so that their positions may suit as well as possible with the principal points thus laid down in the first instance."[6]

It would be impossible to state more clearly than Ptolemy has done in the last paragraph of this long sentence the true course that the geographer should pursue, in order to attain the object he had in view, so far as the means at his command would admit. Unfortunately in his own case those means were really so defective that it was impossible for him to carry out in practice—even approximately—the scheme that he had so well laid down in theory. He himself proceeds to point out the extremely imperfect character of his information concerning many parts of the earth, from their great size or their remote position, and the difficulty of discriminating among the conflicting statements of travellers, and of earlier geographers, so as to separate truth from falsehood, and adhere only to the most trustworthy authorities.[7] He then selects Marinus of Tyre as the author who had upon the whole collected the best materials for the geographer, and after praising him, in the manner that has been already quoted, for his diligence and the general soundness of his judgment,[8] proceeds to point out his defects, and enter into long discussions to refute some of his leading conclusions.

§ 9. The most important of these have been already considered: but it is essential to observe that throughout these

[6] i. 4, § 2. I have translated this important passage just as it stands in the original, without attempting to put it into a clearer form, as it will be seen that the meaning is throughout distinct and intelligible, notwithstanding its singularly involved structure, and the clumsy mode in which one parenthesis is inserted within another. The crabbed and involved style of Ptolemy, as well as the difficulty of the subject, has without doubt contributed much to deter ordinary readers from studying his first book, without which it is impossible to understand the rest of his work. Hundreds have referred to his tables, for one that has gone carefully through his own explanation of their nature and mode of construction.

[7] i. 5.

[8] i. 6, § 1.

discussions Ptolemy never once attempts to refer to astronomical observations, which, had they been forthcoming, would at once have been decisive of the points at issue. On the contrary, in rejecting the extravagant conclusions of Marinus, he expressly does so upon general grounds only, and though his estimates may be more judicious, they are not less arbitrary than those of his predecessor. Thus Marinus, as we have seen, had reduced the supposed distance of Agisymba towards the south *by about one-half*: Ptolemy went farther, and reduced it by *about* 10 *degrees more* (!), so as to place it in just about the same latitude south of the equator that Meroë was to the north of it. But for this assumption he had absolutely no authority at all:[9] and the utter vagueness of his mode of dealing with the whole question is sufficiently shown by the fact that he applies the same reduction to the position of Rhapta on the east coast of Africa, so as to bring it still on the same parallel with Agisymba, as Marinus had placed it; though Rhapta was really situated 5° or 6° south of the equator, while Agisymba was (probably) at least 14° to the north of it.[1]

In like manner, in regard to the remote regions towards the east, it is evident from the manner in which he discusses the position assigned by Marinus to Sera that he had no more definite information by which to correct it. He justly censures Marinus for the enormous distance to which he had carried it eastward, a conclusion based upon the vague statement that it was "a seven months' journey" distant from the Stone Tower; and points out the absurdity of supposing such a journey to be all in the same direction, and to be uniform

[9] He himself admits this; but adds that in the absence of astronomical observations one could only judge in a general way from other phenomena, such as that the people were described as Ethiopians, that is, black men; and the country abounded in rhinoceroses (!) Neither of these things, he says, were found in approaching the equator from the north, till one reached the neighbourhood of Meroë; and hence, he infers, they could not be found at a greater distance south of the equator, than one corresponding to the latitude of Meroë (i. 9, §§ 8–10). And it is on such vague and general reasoning as this that he proceeds to fix the position of Agisymba!

[1] That is to say, if we adopt the suggestion already made that the Agisymba of Marinus was really Bornou, or the region adjoining it.

continuous travelling, without allowance for stoppages or delays. All this is very true and just; but he then proceeds to diminish it *by one half* (though he himself observes that it might well be diminished by *more than half*), and thus arrives at the conclusion that it must be really situated forty-five degrees *and a quarter* east of the Stone Tower.[2] The preciseness of this result is amusing, when we consider the process by which it is arrived at, but when we find in his tables the Stone Tower placed in 135° east longitude, and Sera in 176°, we are able to estimate the real value of such positions.[3] Had it not been for the discussion in the first book, we should have been utterly at a loss to account for the origin of so definite a statement.

§ 10. But it might be supposed that, admitting his definite statements of latitudes and longitudes in these remote countries, where he could not possibly have real astronomical observations, to be fictitious—that is to say, mere arbitrary results derived from the combination of uncertain data—the case would be quite otherwise with regard to the countries familiar to the Greeks, and especially to the lands bordering on the Mediterranean, and those which had been so long subject to the Roman Empire. And yet it will be found on a careful examination, that even here his scientific garb is in truth no more than a specious disguise, and while he really possessed in this case materials far more ample and more trustworthy than in the cases we have been considering, he did *not* possess those positive scientific determinations, upon which alone, as he himself remarks, a true geographer could rely with confidence.

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[2] i. 12, § 1.

[3] Ptol. vi. 13, § 2; 16, § 8. The figures in this last case are uncertain; many of the MSS. having 177° 15′; but such discrepancies may be discarded as insignificant in cases such as we are now considering. Both, it will be observed, differ from his calculation in the first book.

It is curious also that he assigns a difference of *latitude* of nearly 3½° between Sera and the Stone Tower; the ground of which it is difficult to conceive. He indeed justly censures Marinus for supposing that the journey from one to the other was throughout along the same parallel, but he had no other authority, and consequently no means of estimating the amount of deviation.

In the passage already cited,[4] he has himself pointed out, in very distinct terms, the exceeding paucity of astronomical observations to which he could refer. Hipparchus had, it appears, given a certain number of observations of latitude by measuring the height of the polar star above the horizon; but their number was small, and easy as was this process, even with the instruments that the ancients had at their command, his example does not appear to have been followed; and Ptolemy himself refers to these as almost the only observations of the kind available. A more simple mode of determining the latitude would be found by observing the length of the longest day, and doubtless observations of this sort would have been made at all the principal cities of the Roman Empire, though, from the very imperfect means they possessed of measuring time, they could make little pretence to accuracy. But even such observations would suffice to determine the *climates*, as they were called, or zones of latitude within which the day was, approximately at least, of the same length.[5]

But still greater difficulties arose in the determination of longitudes. Here the want of correct mechanical means for the measurement of time was absolutely fatal. The theory indeed was not wanting. Hipparchus, as we have seen, had long before suggested the ingenious idea that, an eclipse of the moon being visible from any two stations, the difference in the time at which it was observed would give the difference in the longitude of the two places in hours and fractions of an hour, which would be readily converted into degrees. Ptolemy himself has shown, in the passage cited, how fully he appreciated the value of such observations, as the only sound mode of determining longitudes. But he intimates at the same time most clearly that they had not been made, or at least that no record of them was forthcoming. The instance to

[4] Above, p. 554.

[5] A number of statements of this kind, generally supposed to be based upon actual observations, are given by Ptolemy himself in his eighth book. The real value of these notices is a point to which I shall recur hereafter.

which he refers as an example of the process,—that of the celebrated eclipse which took place shortly before the battle of Arbela,[6] and which appears to have been observed at Carthage also—was merely a case of popular observation, and had no pretence to scientific accuracy.[7] But not a single instance that could lay claim to such a character is cited by Ptolemy, and if his silence on such a point were not in itself conclusive, it may be added that the occurrence of a few such isolated points, really determined upon independent observations, would of necessity break in, in a manner not to be mistaken, upon the continuous chain of *deductive* conclusions, which were the real basis of his assumed longitudes.

§ 11. The only mode of correcting his calculations with regard to the distances from west to east, which he really possessed, was derived from the other source referred to in the passage above cited—the observations of places that lay *opposite to* one another, and therefore on the same meridian, as proved by the experience of navigators, who sailed with a direct course from north to south, or *vice versa*, from the one point to the other. Such a process was evidently only applicable to a case like the Mediterranean and the seas connected with it: but even as applied to them it appears so rough and primitive a mode of calculation that we are surprised to find the results thus arrived at approximate as nearly to the truth as they do. Thus we find Ptolemy stating, on the authority of Marinus, that Tarraco in Spain was *opposite to* Cæsarea Iol on the coast of Africa: the difference of longitude between the two being in fact rather less than a degree. Again, the same author placed Cape Pachynus in Sicily opposite to Leptis Magna on the African coast, where the difference again amounts to less than a degree: and the Chelidonian Islands on the coast of Lycia to Canopus in Egypt, which is true to about a quarter of a degree.[8] On the other hand, Marinus erroneously

[6] Plutarch, *Alexander*, c. 31. Concerning the date, see Clinton, *F. H.* vol. ii. pp. 156, 341.

[7] The amount of error that it really involved, has been already pointed out. (See Chapter XVI. p. 633.)

[8] i. 15, §§ 2–4. In this case the fact of their being on the same meridian

placed Tergeste (Trieste) at the head of the Adriatic, on the same meridian with Ravenna, a fault for which he is severely censured by Ptolemy, though that author's own ideas of the geography of the Adriatic were, as we shall see, singularly defective.

§ 12. It will be worth while to examine somewhat more carefully the real character of Ptolemy's map of the Mediterranean, not only as affording the best means of estimating the mode in which he constructed his maps, and the true value of his results, but because it became, from the undue authority attached to his name, the recognized guide of all subsequent geographers for many centuries, and it is only in comparatively recent times that the errors he introduced have been gradually eliminated from our modern maps.[9]

It is clear from Ptolemy's own statement that Marinus, whom he followed in this part of his work with only slight occasional deviations, began with laying down, as Eratosthenes had done before him, a principal or fundamental parallel of latitude, extending from the Sacred Promontory (Cape St. Vincent) through the Strait of the Columns and the Island of Rhodes to the Gulf of Issus.[1] This he correctly assumed to correspond with 36 degrees of latitude from the equator: a result which was doubtless derived from the observation of Eratosthenes for the latitude of Rhodes.[2] He then measured his longitudes along this parallel, which he considered to pass from the Straits through Caralis in Sardinia, Lilybæum and Pachynus

had been already pointed out by Strabo (xiv. 3, p. 666). See Chapter XXII. p. 303.

[9] His exaggerated estimate of the length of the Mediterranean, as has been already pointed out, continued to be followed by modern geographers till about 200 years ago. (See Chapter XVI. p. 635.)

[1] Ptol. i. 12, § 11.

[2] That it was in this instance the result of observation, and not of mere calculation of distances, may be safely inferred. For it is wholly at variance with the true latitude, if we reckon the degrees (as Ptolemy did) at 500 stadia each instead of 600. But an observation of course gave the altitude of the pole star, without any reference to the supposed geographical position of the equator. The equinoctial line was of course perfectly fixed and definite in Ptolemy's mind, *as an astronomical line;* but he had no means of assigning its position on the map of the world, except with reference to other parallels, such as the tropic at Syene, or those passing through Alexandria and Rhodes, which had been determined by direct observation.

in Sicily, and Cape Tænarus in the Peloponnese, to Rhodes, and thence to Issus. Here we find one important rectification of the map of Eratosthenes, who had carried his parallel through the Sicilian Straits, more than a degree and a half to the north of Cape Pachynus, and more than 2° north of its true position. On the other hand, Marinus and Ptolemy were guilty of an enormous blunder in bringing down the island of Sardinia so far to the south as to place Caralis, which is really situated in 39° 12′, on the same parallel with Cape Lilybæum (in 37° 48′), and that again with Cape Pachynus, which is more than a degree farther south (36° 40′). The effect of this last error was altogether to distort the form of Sicily and the direction of its three sides: a defect from which the maps even of the last century only slowly recovered.[3]

It is probable that this erroneous conception of the position of islands so well known as Sicily and Sardinia, was in some degree caused by, or at least connected with, the assumed position of Carthage, a point which, from its importance and its extensive trade, might reasonably be supposed to have been definitely fixed. But, as we have seen, the latitude of Carthage had been erroneously assigned by Hipparchus himself as only 900 stadia (or 90 G. miles) north of Alexandria,[4] and this determination was followed without hesitation by Ptolemy, as it had been by Strabo.[5] But navigators could not be unaware of the fact that it was but a short run from Cape Lilybæum across to the Hermæan Promontory (Cape Bon) on the coast of Africa, and again from thence to Carthage. The distance of

[3] This will be clearly seen by a comparison of the maps of Magini (published in 1620, and of Cluver (*Sicilia Antiqua*, 1619) with those constructed on the data furnished by Ptolemy himself, which accompany the earlier editions of his work.

[4] Hipparchus ap. Strab. ii. 5, § 38, p. 133. See Chapter XVII. p. 6.

[5] Ptolemy places Carthage in 32⅔° N. lat., that is to say, a degree and two-thirds to the north of Alexandria, a distance which would very nearly represent the 900 stadia of Hipparchus, according to his calculation of 500 stadia to a degree. There can, therefore, be no doubt that in this instance, as well as in that of Byzantium, he followed the lead of his great predecessor. In the 8th book (c. 14, § 5) he states that the longest day at Carthage was of 14¼ hours, which would agree well with the position assigned in the tables. It was really situated in about 36° 50′ or more than 4° farther north.

Sardinia also from the African coast was one that had been approximately well known from an early period,[6] and in consequence it was necessary to bring it as near to Africa as could well be done: and the whole African coast in that part of the Mediterranean being placed much too far to the south, the geographer was compelled to bring down Sardinia also, and the west of Sicily, much farther south than their true position.

But whatever was the combination by which Ptolemy (and Marinus before him) arrived at these results, one thing is clear—that they were not derived from actual observations, which could hardly have failed to detect errors so considerable in the position of points so near to one another. The only point which was *supposed* to be determined astronomically was Carthage: and the position assigned to it was unfortunately so erroneous as to vitiate all calculations based upon it.

§ 13. We have already seen, in discussing the geographical systems of earlier authors, the importance attached to the position of Massilia, and the advantage derived from its latitude having been correctly determined by Pytheas. This advantage Strabo wantonly threw away, and thereby distorted his whole map of the Mediterranean, as compared with that of Eratosthenes. But Ptolemy wisely returned to the established conclusion, and placed Massilia in 43° 5′ of north latitude, a result very near the truth.[7] Unfortunately he was led by his natural deference to the great authority of Hipparchus to adopt his erroneous conclusion, that Byzantium was in the same latitude with Massilia: an error that had the inevitable effect of distorting the whole of the adjacent portions of his map, and carrying up the mouth of the Borysthenes and the north coast of the Euxine much beyond their true position. That of Massilia, on the contrary, being correctly determined, became a point of primary importance, as that from which all the

[6] Scylax, as we have seen (Chapter XI. p. 387), had correctly stated the distance from Sardinia to the continent of Africa at a day and a night's voyage, which is equivalent (according to his mode of computation) to 1000 stadia, a very fair approximation to the truth.

[7] The true latitude is 43° 18′.

measurements derived from itineraries across Gaul to the Western and Northern Ocean would naturally be reckoned.

Another point concerning which he had unusually good information was the position of the capital of the empire, the great city of Rome. We have no statement of the authority from which this was derived: but it cannot be doubted that there were plenty of Greek astronomers and geographers to be found in the imperial city who were capable of determining its latitude within tolerable limits by positive observation: and we accordingly find it placed in lat. 41° 40′; a position differing from the truth by only about 6 G. miles.

In regard to the eastern portion of the Mediterranean, the positions of Alexandria and Rhodes had been long since determined: the error in regard to their *relative* position having arisen, as has been already explained,[8] from an erroneous estimate of the distance, not from any error in the astronomical observations of their latitude. Marinus, as we have seen, had placed Cape Tænarus on his 36th parallel, about 23 G. miles to the south of its true position, while Ptolemy (for what reason we know not) in this instance departed from his usual authority, and brought it down to 34° 35′; more than 100 miles too far to the south. One effect of this was, to bring the island of Crete into altogether a false position with respect both to the Peloponnese and the south-western coast of Asia Minor, so as to place it in a line between the two, instead of lying (as it really does) altogether to the south of them.

§ 14. If we now proceed to examine the longitudes assigned by Ptolemy, who in this respect also followed closely in the footsteps of Marinus, we shall find them still more erroneous than his latitudes: but in this instance it will be found that the prevailing effect of one fundamental error is sufficient to account, to a great extent, for all the rest. The longitudes reckoned by Marinus along the line already described as traversing the whole length of the Mediterranean, are thus

[8] Chapter XVI. p. 639.

reported by Ptolemy.[9] From the assumed meridian of the Fortunate Islands, he reckoned 2½ degrees of longitude to the Sacred Promontory: thence to the mouth of the Bætis 2½ degrees; and the same distance from thence to Calpe at the entrance of the Straits: thence to Caralis in Sardinia 25 degrees: from Caralis to Lilybæum 4½ degrees; and thence to Pachynus 3 degrees: from Pachynus across to Tænarus 10 degrees: hence to Rhodes 8¼ degrees: and finally from Rhodes to Issus 11¼ degrees. He thus made the whole interval from the Sacred Cape to Issus, which really comprises only about 45° 15′, to extend over not less than 67 degrees of longitude, and the length of the Mediterranean itself from Calpe to Issus, to amount to 62 degrees: rather more than 20 degrees beyond the truth.[1]

It is easy to detect one principal source of this enormous error. Though the distances above given are reported by Ptolemy in degrees of longitude, they were computed by Marinus himself from what he calls *stadiasmi*, that is, from distances given in maritime itineraries and reported in stadia.[2] In other words, he took the statements and estimates of preceding authorities, and converted them into degrees of longitude, according to his own calculation, that a degree on the equator was equal to 500 stadia, and consequently a degree of longitude in latitude 36° would be equal (approximately) to 400 stadia.[3] Reversing this process, we find that the estimates he must have adopted as the most trustworthy gave 24,800 stadia for the total length of the Mediterranean, and 26,800 stadia from Issus to the Sacred Promontory. This calculation was considerably below those of Eratosthenes and Artemidorus, and consequently approached more nearly to the truth than either of them.[4] It was in consequence of the unfortunate error introduced by Marinus and Ptolemy into the graduation of their maps, that they disguised this really valuable result in

[9] i. 12. § 11.
[1] See Note B, p. 638.
[2] This is expressly stated by Ptolemy (*l. c.*).
[3] i. 11, § 2.
[4] See below, p. 568.

a false scientific garb, which had the effect of misleading all succeeding geographers for many centuries. Had the original work of Marinus been preserved, in which he doubtless entered into a full discussion of his materials, and stated at length the particulars furnished by his *stadiasmi*, we should probably have been spared the consequences of his erroneous conclusion.

§ 15. It is very unfortunate that so distinguished an astronomer as Ptolemy should have entered into no discussion as to the different attempts that had been made before his time to determine the circumference of the globe, and the consequent mensuration of the degrees or parts into which it was divided. He contents himself with accepting the conclusion adopted by Marinus, that a degree at the equator, or of any other great circle on the surface of the globe, contained 500 stadia, "as in accordance with the generally received measurements."[5] The result of his application of this mode of graduation to the map of the Mediterranean and the surrounding countries was necessarily to extend them enormously from west to east, where distances were measured continuously along the fundamental parallel of latitude, in the manner already described. Had he possessed any trustworthy observations of longitude, even for a few points (as he did in regard to the latitudes), these would have served to correct the error which, in the absence of all such checks, went on accumulating the farther he proceeded eastward. Thus the real groundwork of his map, so far as it was based upon measured distances, was greatly superior to those of Eratosthenes and Strabo: it was the network of false graduation which he threw over it that vitiated

[5] *καὶ ἔτι τὸ τὴν μὲν μίαν μοῖραν, οἵων ἐστὶν ὁ μέγιστος κύκλος μοιρῶν τξ, πεντακοσίους ἐπὶ τῆς ἐπιφανείας τῆς γῆς ἀπολαμβάνειν σταδίους, ὅτι ταῖς ὁμολογουμέναις ἀναμετρήσεσι σύμφωνόν ἐστιν.* i. 11, § 2.

It is characteristic of the singular want of method that pervades the whole of Ptolemy's first book, and which has probably contributed almost as much as its involved and laborious style to deter students from its due examination, that this important statement, forming in fact the basis of all the geographical calculations in his tables, is merely introduced in passing, and actually in the middle of a sentence!

all his positions, while, from the form given to his work, in which all these erroneous results figured in his tables as if they had been derived from real observations of latitude and longitude, later geographical students were led to adopt them as such, without going back to investigate the process by which he had arrived at them.

§ 16. Another source of error, of much less importance in itself, but which it is essential to notice, inasmuch as it pervades in like manner the whole series of Ptolemy's longitudes, was the erroneous determination, or rather assumption, of the primary meridian from which they were all to be reckoned. We have seen that the Sacred Promontory (Cape St. Vincent), the south-western extremity of Spain, was regarded by almost all the earlier geographers as the extreme western point of the known world. Marinus and Ptolemy both concurred in the commonly received though erroneous opinion, that it was the most westerly point of the Spanish peninsula, and consequently of the continent of Europe; but they knew in a vague way that the Fortunate Islands, which lay at some distance from the western coast of Africa, must be situated also to the west of the Sacred Cape. But they had no real idea of the position of these islands,[6] and when Marinus, in order to include them in his map of the world, drew a supposed meridian through them two degrees and a half to the west of Cape St. Vincent, he was, in fact, merely drawing an imaginary line from which his longitudes were reckoned. The measurements and calculations upon which these were *really* based, all began from the Sacred Cape, which was the limit of what was actually *known;* but in reducing these to degrees of longitude he added always two degrees and a half in order to refer them to the supposed meridian of the Fortunate Islands.

[6] Mr. Donne, in his article LIBYA in Dr. Smith's *Dict. of Ancient Geography*, p. 176, assumes that Ptolemy "was aware of the approximate position of the Fortunate Islands (Canaries) since from them, or some point in them, he calculates all his eastern distances or longitudes." This is a good instance of the prevalent misconception with regard to the character and value of Ptolemy's materials and conclusions.

It is hardly necessary to add, that the meridian thus arbitrarily assumed differed widely from the truth. The Island of Ferro—the westernmost of the group of the Canaries, which long continued, even in modern times, to be assumed as the prime meridian[7]—is really situated 18° 20′ of longitude west of Greenwich, while Cape St. Vincent is just about 9°, so that the real difference between the two amounted to 9° 20′ instead of only 2½°. But the ideas of Ptolemy concerning the western coast of Africa and the islands connected with it, were, as we shall see hereafter, even more vague and erroneous than those of his predecessors. In order therefore to compare his longitudes with those on modern maps, it is necessary to regard them as *really* measured from the Sacred Promontory eastwards, or rather (in regard to the Mediterranean) as he has himself done in his eighth book, from Alexandria westwards.[8]

§ 17. If now we take the distances above given by Ptolemy from Marinus, and calculate the degrees of longitude at the rate of 600 stadia (60 G. miles) to the degree, we shall find the anomalous character of his map to a considerable extent disappear. Instead of 62 degrees from the Straits at Calpe to Issus, the interval is reduced to 52⅔ degrees, still considerably in excess of the truth, but differing from it only by somewhat more than 10 degrees instead of 20. Again, if we take the difference of longitude between two well-known points, as, for instance, that between Alexandria and Carthage, which is reckoned in the tables of Ptolemy's work at 25° 40′, we shall find it reduced to about 21° 20′: only about 1½° beyond the truth. That between Alexandria and Rome, in like manner

[7] It has continued in general use among German geographers down to our own time. But of course the meridian so employed is the *real* meridian passing through the island of Ferro, not that erroneously assumed by Ptolemy.

[8] It appears from the passage in the Almagest already cited, that it had been the original intention of Ptolemy to reckon his longitudes in all cases from Alexandria. He probably adopted the other plan in order to follow the example of Marinus. It had the advantage of simplicity as obviating the distinction between east and west longitudes; but on the other hand had the great disadvantage of rendering all his errors *cumulative*, by reckoning them always in the same direction.

sinks from 23° 50′ to 19° 50′ (the real difference being just about 17°): and from Alexandria to Massilia we obtain 30° instead of 36°, while the real interval is only about 24½°. Caralis in Sardinia, which holds so conspicuous a position on the fundamental parallel of latitude, is placed by Ptolemy in 32° 30′ east of his primary meridian, or 30° from the Sacred Cape, and 28° west of Alexandria. The latter distance, if corrected as above, comes to be only 23° 20′, rather more than 2½° beyond the truth. But the interval beween Caralis and the Straits, instead of amounting to 25, or even to nearly 21 degrees, as it would do according to the corrected graduation, does not really amount to more than 14½°. A large part of the error in the longitudes, which still remains (after correcting the graduation), thus arises, as it appears, from the erroneous computation of this distance, much the longest that is reckoned without a break along the fundamental parallel.[9] This circumstance doubtless arises from the imperfection of the means at the command of ancient navigators, of computing distances at sea; a defect which would be more strongly felt, the longer the unbroken course that it was attempted to estimate.[1]

§ 18. It appears from the preceding investigation that, apart from the constant error arising from defective graduation, there was always a tendency to exaggerate the distances from one point to another, as measured, or rather estimated, by the sea voyage between them. It was doubtless owing to the same cause that the estimate formed by Eratosthenes of the length

[9] No allusion is made to the Balearic Islands, though they do not in reality lie far to the north of a course from Sardinia to the Straits. Hence it would certainly appear that the voyage from one of these points to the other was habitually made at one stretch, without touching at any intermediate points.

[1] Artemidorus, as we have seen, (Chapter XVIII. Note B, p. 103), had estimated the distance from Caralis *to Gades* at 10,000 stadia, equivalent to 25° of longitude, according to Ptolemy's mode of calculation. He was, therefore, actually *nearer the truth* by the whole interval between Gades and the Straits at Calpe, which is reckoned by Ptolemy at 1° 50′. What could have induced Marinus to adopt this more erroneous estimate, instead of that of the earlier geographer, we have no means of judging. In both cases they could only be founded on the vague estimates of navigators.

of the Mediterranean had exceeded the truth by rather more than one-fifth: while Artemidorus had reduced this first approximation by nearly 500 stadia;[2] and the calculation adopted by Marinus, when converted into stadia, would give 24,800 stadia, or 1700 stadia less than that of Eratosthenes. Yet this estimate still exceeds the truth by nearly 500 G. miles:[3] so difficult was it found by successive geographers, in the absence of any positive observations, to emancipate themselves from the effects of this traditional error.

§ 19. It is evident that both the causes which we have just been considering would continue to operate with at least equal force upon the continuation of the map of the world east of the Mediterranean. The effect of erroneous graduation would indeed of necessity be *cumulative*, and produce a greater amount of *displacement* the farther it was carried eastwards. Nor were land itineraries more trustworthy than marine ones. We have already had occasion more than once to point out the defective character of all such as were available in ancient times, except within the limits of the Roman Empire, and these were not available in Asia beyond the Euphrates. Hence Marinus was compelled to rely upon itineraries, in which the distances were given in *schœni*, or parasangs—the vague and inaccurate character of which mode of reckoning had long before been pointed out by Strabo—while he neglected to make any due allowance for the circuitous character of the routes and the necessary deviations from the straight line on which they were to be laid down in the map.

In this respect Ptolemy was far in advance of his predecessors. In treating of the materials with which the geographer had to work, he points out very clearly and judiciously the

[2] The distances cited from Artemidorus are all reckoned *to Gades* (see Chapter XVIII. p. 64); but there can be no doubt that the distance of 750 stadia from Gades to the Strait, as stated by Strabo, was derived from his authority. If we subtract this from his computation we shall obtain 26,670 stadia as the actual length of the Mediterranean. Eratosthenes, as we have seen (Chap. XVI. p. 634), reckoned it at 26,500 stadia.

[3] The actual length of the Mediterranean, supposed to be measured along the parallel of 36°, is in round numbers about 2000 G. miles.

difficulty in making use of distances as given by itineraries, without any accompanying observations, or even notices of bearings, and the necessity of applying a correction to allow for the windings and deviations of the roads in the case of itineraries by land, and irregularities in the force and direction of the winds in the case of those by sea.[4] We have seen that, strange as it may appear, there is no trace of the application of this very simple principle, even by such geographers as Eratosthenes and Artemidorus. Marinus on the other hand seems to have recognized it in theory, and to a certain extent applied it in practice; but Ptolemy was certainly the first to see its full importance and insist on its general application. He points out also with great distinctness the difference of the degree in which these corrections should be made, according as the route was more or less frequented, and the estimate therefore rested upon a wider or more limited experience. The distances along the Mediterranean, for instance, which we have just been discussing, he considers as being well established, and that sufficient allowance had already been made in regard to them for the causes of error just mentioned.[5] But in following Marinus from the Euphrates into the heart of Asia, he describes him as having failed to make any such deduction; and in consequence proceeds to apply them himself. Unfortunately in this case, as in so many others his theory was in advance of his practice, and his correction was purely arbitrary. Thus, while he diminishes the estimated distance from the Euphrates to the Stone Tower (for which Marinus possessed itineraries expressed in *schœni*, and consequently making some approximation to the truth), by something less than one-tenth,[6] he summarily reduces that from the Stone Tower to Sera by one-half (!).[7] The reasons he assigns for making a much larger reduction than usual in this

[4] Ptol. i. 2, § 4.

[5] i. 11, § 2.

[6] The distance, as given by Marinus, amounted to 876 *schœni*, which, at the rate of 30 stadia to the *schœnus*, gave 26,280 stadia. This Ptolemy reduces to 800 *schœni* or 24,000 stadia (i. 12, § 3). It is evident that this merely amounts to cutting off the odd numbers.

[7] i. 11, §§ 4, 5; 12, §§ 1, 3.

last case are indeed conclusive, but the actual amount adopted was—as he himself admitted—altogether arbitrary.

§ 20. The result of these corrections is that he estimates the whole distance from the passage of the Euphrates to the Stone Tower at 24,000 stadia, or 60 degrees of longitude,[8] and that from the Stone Tower to Sera at 45¼ degrees: so that the whole distance from the Euphrates to Sera amounted, according to his calculation, to 105¼ degrees, and when to this was added the result already computed for the interval from the meridian of the Fortunate Islands to the Euphrates, amounting to 72 degrees, he obtained 177¼ degrees for the distance of Sera from the western meridian.[9] This then—or as he elsewhere expresses it, not quite twelve *hours* of longitude (180 degrees)—was the conclusion he arrived at with regard to the length of the known world; instead of the 15 hours or 225 degrees of longitude assigned to it by Marinus.[1]

But it must be remembered that this term, as applied by Ptolemy and Marinus, had no such definite meaning as had been attached to it by earlier geographers. When Eratosthenes or Strabo spoke of the length of the inhabited world (*τῆς οἰκουμένης*), they understood by it a line extending from one ocean to the other, and having consequently a definite boundary at each extremity. But Ptolemy, as well as Marinus, rejected the hypothesis of an eastern ocean, bounding the continent of Asia in that direction, and supposed the land to extend indefinitely towards the east and north, as they considered that Africa did to the south. Hence to them Sera and Sinæ were merely the most easterly *known* points in Asia, just as Agisymba in Africa was the most southerly. Beyond these lay "the unknown land," the existence of which they assumed, in each case, just as former geographers had assumed that of the ocean.

§ 21. In regard to the breadth of the known world, his conclusions were in like manner derived directly from those

[8] Ibid. 11, § 3. [9] Ibid. 12, § 12. [1] Ibid. 14, § 10.

of Marinus, merely applying the correction that he judged necessary to the extravagant extension given by that writer to the continent of Africa towards the south. Thus he assumed the parallel of Thule, which had been placed by Marinus in N. lat. 63°, to be the northern limit of the world,[2] and that of Prasum according to his own arbitrary rectification of its position, to be its southern limit, which he accordingly placed in about 16 degrees of south latitude. He therefore assigned to it, in round numbers, a breadth of about 80 degrees, thus exceeding largely the estimate of either Eratosthenes or Strabo, but still keeping within the limits of the proportion so strangely assumed by ancient geographers, that the length was *more than double* the breadth.

§ 22. Before quitting the subject of the scientific framework with which Ptolemy sought to envelop and disguise the real poverty of his materials, it is necessary to advert briefly to his eighth book, which has been thought by many modern writers to have a more truly scientific character than the rest, and to be entitled to a degree of authority which, they admit, cannot be claimed for the positions in his ordinary tables. After devoting the whole of five books—from the second to the sixth—and a part of the seventh, to the enumeration in the tabular form, arranged according to the countries and provinces in which they were situated, of all the points of which he thought it necessary to fix the position, he proceeds to give a summary of the whole, and a general description of the figure and dimensions of the known world, such as would form a fitting companion to a general map of it.[3] After this, in the eighth book, he goes on to explain how the map of the world can be most conveniently divided into separate maps, and adopts a division into twenty-six such maps, which, as he justly points out, have no occasion to preserve a fixed proportion with one another, but may be of a smaller or larger scale according as the countries they include are more or less

[2] Note C. p. 639.

[3] vii. c. 5.

known, and require to be represented in more or less detail.[4] The series of maps that he proposes to construct is thus entirely similar to that in a modern atlas. Of these he devotes ten to Europe, four to Africa, and twelve to Asia.[5]

He then gives, in regard to each of these maps, a succinct statement of the countries which it includes, and the limits within which it is comprised: as well as the proportion which the degrees of longitude bear to those of latitude. This proportion he states only with respect to some one parallel passing nearly through the middle of the map. The same proportion will, of course, as he does not fail to remark, not be mathematically correct for the other parallels, but he considers the difference as unimportant within the limits of each partial map.[6] Hence every one of these separate maps is in fact constructed upon the same principles as Marinus had applied to his general map of the world, and in giving the proportion of longitudes to latitudes for one parallel, Ptolemy considered himself as doing all that was requisite for the graduation of each map.

§ 23. But he then adds, for each map, the latitudes and longitudes of a certain number of the most considerable cities contained in it, reported however in a totally different manner from that employed in his previous tables, giving in each case the latitude as denoted by the length of the longest day, and the longitude according to the difference of time from Alexandria. Both are expressed in equinoctial hours and fractions of an hour.[7] These have been generally regarded as merely a different mode of stating the latitudes and longitudes of the places thus selected. And this is certainly at first sight the natural inference from his own words in the passage just cited. But it is not easy to perceive the purpose of such a recapitulation of a certain number of selected positions in each country, giving in substance no other information concerning them than is already given in the other tables. Hence it has

[4] viii. 1, §§ 4, 5. [5] viii. 2, § 1. [6] Ibid. i. §§ 6, 7.
[7] viii. 2, § 1.

been supposed by many modern writers that the positions here given are such as had been really determined astronomically, as distinguished from those in the tables, which were for the most part derived merely, in the manner already explained, from itineraries or the information of travellers. But no hint is given by Ptolemy himself of such a distinction, which he could hardly have failed to point out, had it really existed. Moreover, the number of positions given in the eighth book is far greater than can be reasonably supposed to have been determined by positive observation: and all the objections that have already been brought forward to show that this was impossible in the case of the ordinary tables apply in great measure to those in the eighth book also. The measurement of longitude by time was the very thing that the ancients had no means of accomplishing. Can we suppose that Ptolemy really possessed any such observations for such places as the islands of Thule and Scandia in the north, or for Garama and Gira in the interior of Africa? And when we find him stating these same particulars for Sera, Sinæ, and Cattigara, concerning which we know how utterly vague, as well as erroneous, his information really was, does not this at once show that they are based upon no foundation of actual observation?

§ 24. The real purpose of the eighth book appears to have been a totally different one. Ptolemy, we must remember, was much more an astronomer than a geographer: and his object throughout his work was to consider the world that he was describing rather in its astronomical and cosmical relations than with reference to its physical conditions or the special objects of the ordinary geographer. Hence, after having laid down, in the best manner he could, all the positions that he thought requisite, upon his map of the world, he was desirous to point out, with respect to the chief of these, some of the most essential of their astronomical relations, such as the length of the longest day, and the difference of time from a fixed standard. To these he adds, in respect to all those places situated within the tropics—even in such cases as Sinæ

and Cattigara, and the towns which he places in Taprobane, with regard to which he certainly could have no observations —a notice of the course of the sun with respect to them, and the extent to which it deviates from the vertical position through which it necessarily passes. Such particulars are of no value for determining the latitude, which is sufficiently given by the length of the longest day. They are simply astronomical facts, interesting only to the astronomical geographer. But moreover they are facts which the mathematical geographer would be able to calculate for himself with regard to any given position; and that this is what Ptolemy really did, is shown by the fact that while his account of these phenomena is correct for the latitude *assumed* for each place, it is in many cases glaringly wrong for the *real* position of the place in question. Thus, he tells us of Syene, which was placed by common consent, and approximately correctly, on the northern tropic, that the sun is vertical there once in the year, when it just touches the tropic.[7] This of course is correct: but he employs the very same words in regard to Arbis on the coast of Gedrosia, which he conceived to be in the same latitude with Syene, but which is really situated nearly two degrees farther north. In like manner he ascribes to Pattala on the Indus, which he supposed to be *within* the tropic, the phenomena that would be incident to such a position, and affirms the same thing of Garama in Libya, which was also really situated three degrees to the north of the tropic, though he supposed it to be two degrees to the south of it. Another striking instance of this mode of proceeding occurs in the case of Thule, which, as we have seen, he placed in 63° N. latitude, and of which he tells us that it had a day of twenty hours' duration, a statement just about correct for the assumed position, but much beyond the truth for the group of the Shetland Islands, which may be considered as certainly that intended by Ptolemy.[8]

The conclusion seems inevitable that, in all these cases,

[8] See Note C, p. 639.

Ptolemy was not recording the results of observations, but stating for the information of his readers what he knew must be the fact, *assuming* the position of the place to be such as it was already determined in his tables. And the same explanation may be extended to all the other statements contained in the eighth book. They are evidently not, as they have been commonly regarded, a fresh series of *data* for certain positions which have been already determined, but a statement of certain astronomical facts with regard to a certain number of places, the position of which is assumed to be already known.[9] From this point of view the purpose of this fresh series of tables becomes at once clear and intelligible. Their principal value *to us* in fact arises from their furnishing us with the means of correcting and checking the numbers given in the other tables, which have frequently become corrupted in our existing manuscripts, but this was certainly not the object for which they were framed.[1]

§ 25. In regard to the mathematical construction, or (to use the modern phrase) the projection of his maps, Ptolemy was far in advance of his predecessors. For his special maps indeed he contented himself, as has been already pointed out,

[9] It will be found indeed that these statements are always *adapted* to the *supposed* latitude, even where this was altogether wrong, and in regard to places at which one might readily suppose observations of the length of the solstitial day to have been really made. Thus even in such cases as Carthage and Byzantium we find that the duration assigned to it is that which would correspond to the *erroneous* latitudes in which they were placed by the observations of Hipparchus, not to their true latitudes.

A strong additional proof that this was the sole purpose of the information he has here given, is to be found in his observation that he would have added further particulars, concerning the fixed stars which were in the zenith of each locality, had it not been for their deviation from a course parallel to the equator (viii. 2, § 2).

It may be added that this purpose is entirely in accordance with the passage in the Almagest in which he indicates his intention of giving in his geographical work the positions of the different points on the earth's surface, "as a basis for the calculation of the celestial phenomena at each place."

[1] It must be remembered that the calculation of the latitude from the length of the longest day, or *vice versa*, though one for which Ptolemy himself was fully competent, is by no means a simple process, and would be altogether beyond the capacity of the greater part of his readers. Even with regard to the longitudes, many persons would be glad to see at a glance the difference of time, calculated at once from Alexandria, instead of having to deduce it from the degrees of longitude, calculated as they were in the other tables from a fixed meridian in the west.

with drawing his meridians and parallels in straight lines parallel with one another, merely taking the proportion of degrees of longitude to those of latitude, as it stood with respect to some one parallel towards the middle of his map, and neglecting the inclination of the meridians to one another. He proceeded therefore with regard to these particular maps in exactly the same manner as Marinus had done with his general map of the world. Such a course, as he himself repeatedly affirms,[2] did not make any *material* difference within the limits of each special map. But it was otherwise with the general map, including, according to his calculation, not less than 180 degrees of longitude, and 80 degrees of latitude. The errors arising in this case from the attempt to transfer to a plane surface so great an extent of the spherical surface of the globe were such as to require to be met by new modes of mathematical construction.

It is unnecessary here to enter into the details of the methods employed by Ptolemy for this purpose, which presented a near approximation to some of those still in use among modern geographers. After explaining fully a mode of projection in which the equator and parallels of latitude would be represented by parallel curves, while the meridians would be represented by straight lines, converging to a point situated beyond the limits of the map; he then points out the necessary defect in this method arising from the taking the meridians as straight lines instead of arcs of a circle, and then proceeds to give another construction, more elaborate, but too cumbrous for general use, in which allowance should be made for the curvature of both sets of lines. This last method, however, had the defect, as he himself points out, of being inconvenient for those who sought to place on their map the different points of which the latitudes and longitudes were given; and thus draw a map for themselves: hence, while he himself gives the preference to the more laborious, but more

[2] ii. 1, § 10; viii. 2, § 6.

accurate, method of delineation, he seems to be aware that the other would be more generally followed.[3]

In point of fact, Ptolemy's theoretical skill was in this matter, as in so many others, altogether beyond the nature of the materials to which he had to apply it. Any inaccuracy arising from theoretical defects in the mode of delineating his maps would be quite insignificant in comparison with the grave and serious errors into which he was led by imperfect knowledge and erroneous information: not to speak of that fundamental error in the graduation of the whole, the disastrous effects of which have been already pointed out.

§ 26. The whole design and character of the work of Ptolemy was so intimately connected with the construction of the maps to which it refers, that there can be no doubt it was from the time of its first publication accompanied by such a series of maps. It would indeed be altogether incomplete without them. But as the materials which he furnishes in his tables would enable any one with a moderate amount of geographical skill to construct such maps for himself, it is very difficult to judge how far those which accompany the existing copies of his work are to be taken as representing the originals. In two of the existing MSS. it is expressly stated that the maps which accompany them are the work of one Agathodæmon of Alexandria, who drew them "according to the eight books of the Geography of Claudius Ptolemy."[4] It is evident that this expression cannot be taken as proving anything, one way or the other, and the name and age of Agathodæmon are otherwise unknown.[5] But it certainly seems most probable that he

[3] Ptol. i. c. 24.

[4] Ἐκ τῶν Κλαυδίου Πτολεμαίου Γεωγραφικῶν βιβλίων ὄκτω τὴν οἰκουμένην πᾶσαν Ἀγαθοδαίμων Ἀλεξανδρεὺς ὑπετύπωσε.

[5] The supposition that the author of these maps was identical with a grammarian of the name of Agathodæmon, who lived in the fifth century, is purely gratuitous, unless we assume that there could not be two persons of the same name. As Heeren has justly pointed out, it was very unlikely that a grammarian should possess the talent of an artist; and the maps that bear the name of Agathodæmon were evidently the production of some one selected for his artistic skill. Those appended to the MS. found at Mount Athos and reproduced in facsimile by M. Langlois (4to. Paris, 1867) are of a much ruder character, and are probably derived from a different source.

MAP OF THE WORLD ACCORDING TO PTOLEMY

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was a contemporary of Ptolemy, who was employed by him to delineate these maps, according to the instructions given in the first book, and from the detailed materials contained in the following ones.[6] The few instances in which discrepancies are found between the maps and the text are such as cannot readily be ascribed to any mere copyist at a later period. At all events it is probable that, as an Alexandrian, he would have access to the original works of Ptolemy, and may therefore have copied his own series directly from the prototypes prepared by, or under the direction of, Ptolemy himself.

[6] This is the conclusion of Heeren (in his *Dissertation on the Sources of Ptolemy's Geography*, p. 474, appended to his *Historical Researches—Asiatic Nations*, vol. iii.) as the most probable supposition; though it must be admitted that it is not established on anything like proof.

CHAPTER XXIX.

PTOLEMY—(*continued*)

PART 2.—*Detailed Geography.*

§ 1. HAVING thus examined the scientific framework of the great work of Ptolemy and shown how far this was from representing a corresponding basis of true scientific knowledge, we must next proceed to consider the extent of the information that he really possessed, and the progress that had been made in his time, in comparison with that of Strabo and Pliny, in the geographical knowledge of the world. And here we possess this great advantage, derived from the scientific form of his work, that his ideas, however imperfect or erroneous, were necessarily expressed in a definite form, that enables us in most cases to determine with little difficulty both the actual extent of his knowledge, and the nature of the errors with which it was disfigured.

He commences the detailed portion of his work with the western regions of Europe, and devotes two sections of his second book to the description of the British Islands, concerning which he certainly possessed information far more extensive and complete than any of his predecessors. Nor is this to be wondered at. It was in the interval between the death of Pliny and the compilation of his own work that the Romans had not only carried their arms under Agricola to the northern extremity of Britain, and sailed with a fleet round its eastern and northern shores, but had permanently established their dominion over the whole island south of the estuaries of the Forth and Clyde. Within this limit the whole country had been reduced into the form of a province, intersected by lines of military roads, and was gradually

approaching to the same condition of prosperity and civilization, which had been already attained by Gaul and Spain.

§ 2. The neighbouring island of Hibernia (or Ivernia, as Ptolemy writes the name[1]) had indeed remained untouched by the Roman arms: but even in the time of Agricola its ports and coasts were beginning to be well known by the merchants who traded thither from Britain and Gaul,[2] and during the long period of tranquillity that followed there can be no doubt that these commercial relations would be carried on with increasing vigour. Such intercourse would be amply sufficient to explain the greatly increased knowledge possessed by Ptolemy of an island almost unknown to the earlier geographers.[3] He not only gives (according to his usual plan) a regular *periplus* of the coasts, enumerating the principal headlands, bays, and mouths of rivers, but mentions the names of no less than seven cities in the interior, besides two (Menapia and Eblana) on the east coast. Of these last Eblana is without doubt identical with the modern Dublin; while Menapia is uncertain, and no plausible conjecture can be formed as to any of the inland towns. But of the names of the rivers—usually one of the most permanent portions of geographical nomenclature—several can be identified with reasonable certainty, and thus bear testimony to the authentic character of Ptolemy's information. Thus the Oboca, between Eblana and Menapia, is clearly the Avoca, and the Buvinda, north of Eblana, the Boyne; the Birgus or Bargus is in all probability the Barrow, and the Senus probably represents the Shannon. On the west coast also the name of the Nagnatæ, whose capital of Nagnata is termed "an important city," is clearly preserved in that of the modern province of Connaught.

[1] It is singular that this later Greek form of the name, as well as the Latin Hibernia, departed more widely than that of Ierne, by which the island was first known to the Greeks, from the native name of Erin, from which they were all without doubt originally derived.

[2] Tacitus, *Agric.* c. 24. "Melius aditus portusque per commercia et negotiatores cogniti." This appears to me quite sufficient to account for such knowledge of the island as we find in Ptolemy. The suggestion of Dr. Latham (art. IERNE, in Smith's *Dict. of Ancient Geography*), that he had Phœnician or Carthaginian sources of information, seems alike improbable and unnecessary.

[3] Ptol. ii. 2.

With regard to the geographical position of Ireland Ptolemy was far better informed than Strabo: and though he still carried it much too far to the north, so as to place even its southern extremity in a higher latitude than North Wales,[4] he was well aware both of its proximity to the shores of Britain and of its general direction from south to north, facing the coasts of the larger island through a considerable part of their extent.

§ 3. Ptolemy's description of Britain affords a striking example both of the merits and defects which generally characterise his work. While his geographical enumeration of names, whether of places and tribes, or of the natural features of the country, is highly valuable, and a large number of them can be identified without difficulty, his idea of the configuration of the island, and the direction of its coasts, is extremely erroneous: and his assigned positions in latitude and longitude utterly worthless, if regarded as anything more than indications of his views as to the *relative* position of the places thus enumerated. We are fortunately enabled, in a great number of cases, to correct the positions and identify the sites of the towns in the interior, by the aid of the Roman Itineraries, as well as the evidence of existing names; while his *periplus* of the coast is so complete, and in general so accurate, as to leave little difficulty in determining the principal points which he intends to designate.

A remarkable instance of the accuracy of his information is afforded by the clear distinction which he makes between the two headlands that may be considered as forming the south-western extremity of Britain—the Land's End and the Lizard. Both of these are distinctly specified—each of them for some unknown reason by two separate names:[5] and he even

[4] He places the Νότιον ἄκρον (the south-western extremity of the island) in lat. 57° 45′, while the north coast of Wales did not, according to his calculation, surpass 57°. The North Cape of Ireland (Βόρειον ἄκρον) he placed in lat. 61°; but assigned to its north-eastern headland (Ροβόγδιον ἄκρον) the higher latitude of 61° 30′; thus carrying it more than six degrees to the north of its true position.

[5] Thus he calls (ii. 3, § 3) the Land's End Antivestæum and Bolerium (Ἀντιουέσταιον ἄκρον τὸ καὶ Βολέριον), and the

places them in just about their relative position to one another, though considerably exaggerating the distance between them. It is to be observed also that he places the Promontory of Ocrinum, the southernmost of the two, a degree and three-quarters of latitude (87½ G. miles) to the north of the opposite extremity of Gaul, which gives a very fair approximation to the width of the British Channel in this part. All these circumstances point to his possessing accurate information concerning this portion of Britain, from its continued intercourse with the opposite coasts of Gaul. But he makes no mention in connexion with it of the islands of the Cassiterides, which he supposed, in accordance with the received tradition both of Greek and Roman geographers, to be situated off the coast of Spain,[6] so that he actually places them within a short distance of the Nerian Promontory (Cape Finisterre).

As we proceed northward, we find, as might reasonably be expected, Ptolemy's information becoming much less accurate, and it is more difficult to determine the several headlands and estuaries named by him: a difficulty greatly enhanced by the very indented and irregular character of the Scottish coasts, as well as by the strange error in regard to their position, which utterly distorts this portion of his map. For while he had a tolerably accurate notion of the general configuration of the coasts of England, as far north as the Solway and Tyne, and correctly placed the Promontory of Novantum (the headland of Galloway) opposite to the north-eastern point of Ireland, he unfortunately conceived the general extension of the island beyond this to have its direction from west to east, instead of from south to north, so that he actually placed the northern extremity of Scotland (opposite to the Orkneys), farther to the south than the Promontory of Galloway,[7] which

Lizard the Damnonium or Ocrinum (Δαμνόνιον τὸ καὶ Ὄκρινον ἄκρον). In the last case the alternative name is evidently merely that of the adjoining people applied to the headland.

[6] ii. 6, § 76.

[7] That the Novantum of Ptolemy (ii. 3, § 1) is to be identified with the Mull of Galloway admits of no reasonable doubt, both from its proximity to

he conceived to be the most northern point of the whole island. The origin of this strange mistake is very difficult to imagine: it is all the more unaccountable, because the general configuration of Scotland, if we suppose it *twisted round* on his map to about its true direction, would not differ very widely from the truth, presenting at least a general resemblance in many important features.[8] It would appear therefore that even for this part of the island he had tolerably good information, but that he altogether perverted the results derived from it by the erroneous manner in which he laid them down upon his map.

§ 4. This complete misconception of the real form of the northern parts of Britain involved him of necessity in the most hopeless confusion in regard to the islands that surrounded its shores. He was indeed well aware, as Pliny had been before him, of the existence of a numerous group of islands, to which he gave the name of Ebudæ—answering to the Hæbudes of Pliny, and to the modern Hebrides:[9] but he was erroneously led to connect them with Ireland instead of Scotland, and placed them in a cluster only about a degree to the north of the former island. The Orcades (Orkneys) also were well known to the Romans ever since the time of Agricola; and their accounts no doubt concurred in placing them considerably to the north of the farthest extremity of the mainland. But Ptolemy, having carried this extremity to the east instead of to the north, could not place the islands in the same direction, and hence, though he gave the name of Orcas to the remotest

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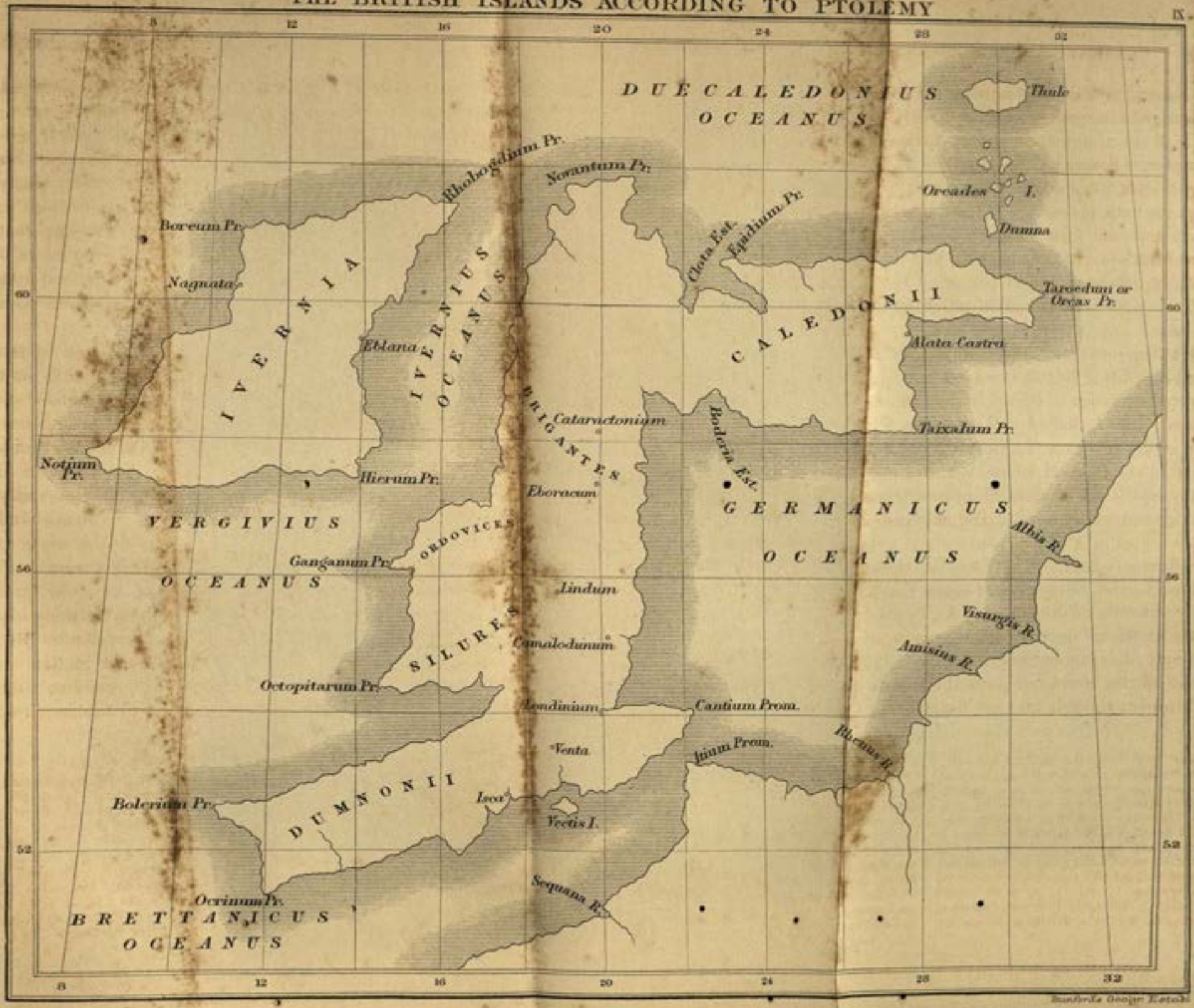
Ireland and from the distinct mention of its connection with a peninsula (Νοουαντῶν χερσόνησος καὶ δμώνυμον ἄκρον).

[8] So much, indeed, is this the case that General Roy has actually suggested that Ptolemy really possessed a correct map of the island, but that the part of it containing North Britain had been accidentally torn off, and replaced in a wrong position, so as to extend the island towards the east, instead of the north (Roy's *Military Antiquities*, p. 116). See Note D, p. 640.

[9] It is singular that this appellation, so familiar in modern geography, should be derived originally from a false reading of Pliny, as that of the Grampians is from one in Tacitus. But the authority of Ptolemy, in whom the form is Ἔβουδαι, is decisive in favour of the reading Hæbudes or Hebudes in Pliny (iv. 16, § 103), in preference to that of Hebrides, which is found in the earlier editions.

THE BRITISH ISLANDS ACCORDING TO PTOLEMY



London: John Murray.

point of the mainland, he was compelled to separate the islands of the same name from that headland, and carry them considerably farther to the west, into a position with regard to the mainland wholly different from that which they really occupy.[1] Having thus determined the position of the Orcades (the centre of which group he places in lat. 61° 40′) he proceeds to notice Thule, which he describes as a single island of large size, extending not less than 55 G. miles from south to north. Notwithstanding this description there can be no doubt that he meant to designate by that name the group of the Shetlands, which, as we have seen, had been already discovered by the Romans under Agricola.[2]

§ 5. Of countries so well known as Gaul and Spain, which had now been so long subject to the Roman dominion, Ptolemy could hardly be expected to add much to the information already possessed by his predecessors. The statistical surveys undoubtedly instituted by the Romans in all those countries that were subject to the complete provincial organization could not fail to furnish valuable and trustworthy materials to the geographer, in so far as the names of tribes, cities, and towns were concerned, and even in a rough way their relative positions. But when Ptolemy came to apply these materials as geographical *data* for the construction of a map, it is strange to see how imperfect and how erroneous were in many cases the notions that he had formed of the geographical relations and positions of places whose names

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According to Ptolemy they were five in number, two bearing the name of Ebuda, and the others those of Ricina, Maleus, and Epidium; but from his erroneous idea of their position, it would be idle to attempt to identify them with any of the numerous islands that gird the west coast of Scotland, of the number and extent of which Ptolemy had evidently no idea.

[1] Ptol. ii. 3, § 31.

[2] In fact the Mainland of the Shetlands is so much the most important island of the group, that it lends itself to the supposition of its representing Thule, in a manner that would not at all apply either to the Orkneys or Faroes. Ptolemy places its southern extremity in 62° 40′ N. latitude, or just a degree to the north of the Orcades, which is a very fair approximation to the truth. Here, as in so many other cases, we recognize the accuracy of his information in details, however perverted may be his general results.

were familiar to all. In regard to Spain, indeed, his chief error was in the delineation of its western coast, and the undue extension which he gave (in common with most earlier writers) to its south-western extremity, the Sacred Promontory, which he represents as projecting three degrees farther west than the mouth of the Tagus, while he ignored almost entirely the bold projection of the Lusitanian coast, ending in the celebrated headland known as the Rock of Lisbon. The Promontory of Nerium in Galicia (Cape Finisterre) he placed in like manner $2\frac{2}{3}$ degrees to the east of the Sacred Promontory, while it is really situated about a quarter of a degree to the west of it: and at the opposite extremity of the north coast he represented the Pyrenees as ending in a bold projecting headland (called Œasso), constituting two deep gulfs, one on each side of it: for all which there is no counterpart in reality.[3]

With the western coasts of Gaul his acquaintance was equally imperfect. While he represents the line of coast from the mouth of the Atur (Adour) to that of the Loire as indented by deep bays, with corresponding projections of the coast-line far exceeding anything to be found in reality, he had a very imperfect notion of the great projecting headland or peninsula of Bretagne towards the west,[4] while he takes no notice at all of the similar projection of the coast of the Cotentin in Normandy to the north, which constitutes the most marked feature in the British Channel. His conceptions of the physical geography of the interior were still more erroneous. His mode of fixing his positions solely with reference to their assumed latitude and longitude was indeed ill-adapted for designating the courses of rivers or the directions of mountain chains; but

[3] ii. 6, §§ 10, 12; 7, § 1.

[4] He was, indeed, well aware that the country of the Osismii, who inhabited the western portion of Bretagne, extended considerably to the west, and that the headland forming its extremity in that direction, to which he gives the name of Gobæum, was the westernmost point of Gaul; but he is far from giving it its full extension, and as he only mentions one headland, it is impossible to decide to which of the two that form the extremity of the department of Finisterre, the name should be assigned in preference. Nor does he notice the island of Ushant, any more than those of Guernsey and Jersey.

after making full allowance for this difficulty, we shall still find his notices of these important geographical features disfigured by some astounding errors.

§ 6. Of the Rhone, indeed, he gives a tolerably correct account, placing its sources in the Alps, from whence it flowed through the lake Lemannus to Lugdunum (Lyons) and thence turning abruptly to the south continued to hold that direction till it entered the Mediterranean. But while he also correctly adds that the Arar (Saône) and Dubis (Doubs) unite their combined waters with those of the Rhone near Lyons, he by a strange mistake describes those streams as having also their sources *in the Alps*, not far from those of the Rhone. The Rhine, on the other hand, he regarded as having a nearly direct course from south to north, through its whole extent: and while he places its sources in Mount Adulas, he entirely ignores both its passage through the Lake of Constance and the enormous bend by which it encircles more than half of Switzerland. Of the tributaries of the Loire and Seine, with which the Romans had been familiar from the days of Cæsar, he does not mention one; and though he notices the Mosa (Meuse) as flowing into the sea by a distinct mouth of its own, he makes no mention of the Moselle or any other of the great tributaries of the Rhine. It is hardly worth while to notice other errors of detail; but when we find him placing Paris (Lutetia, or, as he writes the name, Lucoticia), on the same parallel with the mouth of the Loire, 3° of latitude south of that of the Seine, and less than the same distance north of Lyons; the sources of the Loire $3\frac{1}{2}°$ of longitude west of Lyons, and within 80 G. miles of those of the Garonne; it is evident at once how much was still wanting to anything like a true geographical conception of a country in other respects so well known as Gaul.

§ 7. If this was the case with respect to Gaul and Spain, it was necessarily still more so with regard to Germany. Not only had this great country never been reduced under the dominion of Rome, but the Roman arms had never penetrated

in later times even as far into the interior as they had been already carried during the reigns of Augustus and Tiberius. No additional sources of information had been opened out in this quarter since the time of Pliny and Tacitus, and while Ptolemy's knowledge of the tribes and nations of the interior in general shows no advance upon that of his predecessors, his attempt to represent such information as he possessed in a strictly geographical form only serves to show more clearly its extremely vague and indefinite character. In this case indeed the difficulties of his task were increased, not only by the absence of roads and itineraries, but the want of fixed places of abode and permanent towns, and the fluctuations to which the limits of the different tribes were continually subject. Many of the most important names of nations that appear in Tacitus are not found in Ptolemy:[5] and in other cases it is uncertain whether the new names that appear for the first time in the latter author represent a corresponding change in the population, or are merely new appellations for the same tribes. Germany, or Great Germany, as he calls it, to distinguish it from the Roman provinces on the left bank of the Rhine, was bounded on the west by the Rhine, on the east by the Vistula, and on the north by the German Ocean, the coast of which he describes in some detail, giving the names of the three well-known rivers, the Amisius (Ems), the Visurgis (Weser), and the Albis (Elbe), to the west of the Cimbrian Chersonesus, while beyond that peninsula to the east he places in succession three other rivers to which he gives the names of Chalusus, Suebeso, and Viadus or Viadrus: of which the last may perhaps be the Oder, but the other two cannot be identified.[6] In respect to the Cimbrian Chersonese itself he was much

[5] Among these are the Ingævones, Hermiones, &c. On the other hand the name of the Saxones, which was destined to play so important a part in later times, appears for the first time in Ptolemy (ii. 11, § 11), who represents them as occupying the southern part of the Cimbrian Chersonese, the modern Holstein. They were apparently but an insignificant tribe, and had probably been comprised by earlier writers under the general name of Cimbri.

[6] ii. 11, § 4. None of the three names is found in Pliny, or in any other author, except Marcian of Heraclea, who obviously copies Ptolemy.

better informed than preceding writers, and fully appreciates the importance of this great geographical feature of the Northern Ocean, giving particulars of its dimensions and extent which do not differ very widely from the truth.[7] It is strange, that while in this instance he appears to have had access to better information, his knowledge of the supposed islands in the Baltic was still more imperfect than that of Pliny, or else he discarded as mere exaggerations the rumours of their vast extent; and while he mentions the name of Scandia, he reduces it to a mere island of ordinary dimensions,[8] which he describes as situated opposite to the mouth of the Vistula.

Of the interior of the country he had, as might be expected, very little knowledge. He was indeed acquainted (or supposed himself to be so) with the sources of the great rivers—the Weser, the Elbe, and the Vistula, and had heard the names of several ranges of mountains in which they were said to take their rise. Thus he enumerates the mountain-range of Abnoba, which he supposed to run parallel with the Rhine from about latitude 49° to 52°: the Melibocus, in which were the sources of the Weser, extending from west to east through more than 4° of longitude: the Sudeti in which the Elbe took its rise, nearly parallel with the preceding, but about 2½° farther south: and the Asciburgius, containing the sources of the Vistula, which extended in a S.E. direction from lat. 54° to 52° 30′. On the eastern frontier of Germany, and forming the limit of that country from the sources of the Vistula to the Danube, was a range to which he gives the name of the Sarmatian Mountains.

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[7] He gives to the peninsula (from the mouth of the Elbe to its northern point) a length of about 6 degrees (300 G. miles), which somewhat exceeds the truth: but as he supposed its general direction to be just about N.E., instead of nearly due N., he does not carry it more than three degrees of latitude to the north of the Elbe, thus placing it in latitude 59° 30′, nearly opposite to his assumed position for the north point of Britain.

[8] He assigns to it a length of only three degrees of longitude (about 90 G. miles), and a breadth of about half. Yet by a strange inconsistency he describes it as inhabited by not less than six different tribes (ii. 11, § 35). None of these names are otherwise known; while he has no mention of that of the Suiones, which, as we have seen, was already known to Tacitus.

This last clearly represents the western portion of the Carpathians: but the identification of the rest of these mountain-chains is almost entirely arbitrary. The mountain systems of Germany are indeed so complicated and so little marked by natural divisions into distinct ranges and groups that it would require a skilled geographer to arrange them into any intelligible order: and Ptolemy's information was wholly inadequate for the purpose, even if he had possessed that general insight into physical geography, of which he was in reality in great measure destitute. It is remarkable that the Hercynian forest, which figures in the writings of earlier authors—especially of Latin writers[9]—as one of the leading features in the geography of Germany, shrinks in the map of Ptolemy to a mere local appellation of comparatively small extent.[1]

§ 8. East of the Vistula lay the vast region of plains, stretching across from the Baltic to the Euxine and the mouth of the Tanaïs, to which Ptolemy gives the general name of European Sarmatia. This country had originally been known to the Greeks only by the traders who penetrated into the interior, or ascended the course of the great rivers that flowed from thence—the Tyras, the Hypanis, and the Borysthenes. But new sources of information had recently been opened out by the progress of the Roman arms on the side of Pannonia and Dacia: and after the reduction of Dacia into a Roman province by Trajan, the adjoining districts of Sarmatia must have come to be known by frequent intercourse, whether for purposes of commerce or war. It was in this manner that Ptolemy had doubtlessly derived his knowledge of the Carpathian Mountains (Mons Carpatis); the name of which is found for the first time in his work. He appears to have had a tolerably distinct idea of their position between Dacia and Sarmatia, and containing the sources of the Tibiscus and Tyras.[2] Some vague reports even of the countries on the shores of the Baltic, or the Northern Ocean as it was supposed

[9] See the passages already cited from Cæsar, Tacitus, and Pliny.

[1] ii. 11, § 7. ὁ Ὀρκύνιος δρυμών.

[2] iii. 5, § 6; 8, § 1.

to be, had in this manner reached the ears of Greek or Roman writers, and Ptolemy gives us the names of four rivers as flowing into this ocean, east of the Vistula.[3] He conceived the coast as continuing to hold a direction at first from west to east, but gradually trending away to the north till it reached the parallel of Thule, in 63° of latitude. This was the limit of his supposed knowledge towards the north: beyond it, he believed the land still to extend indefinitely, but nothing was known concerning it.[4] To the great bay thus formed by the Northern Ocean east of the Vistula he gives the name of the Venedic Gulf, from the people called Venedi, who inhabited its shores, and whom he describes as one of the great nations of Sarmatia. The others which he ranks in the same class (exclusive of numerous petty tribes) are the Peucini and Bastarnæ on the borders of Dacia, the Iazyges and Roxolani on the shores of the Palus Mæotis, and in the interior (i.e. to the north of these) the Hamaxobii, and the Alauni who were a Scythian race. These last are evidently the same with the Alani, who were already well known among the warlike nations with which the Romans were engaged in hostilities:[5] another branch of them is mentioned by Ptolemy himself among the Scythian tribes of Asia.

§ 9. But while Ptolemy's acquaintance with the nations that inhabited the tract to which he gives the name of European Sarmatia appears to have been tolerably precise and accurate, it is strange to find him falling into confusion with regard to the great rivers that flow into the Euxine—so well known to, and so accurately described by Herodotus, and actually placing the mouth of the Hypanis to the *eastward* of that of the Borysthenes. But a much stranger error is that which he commits with regard to the Palus Mæotis, to which he not only assigns

[3] iii. 5, § 2. None of these names can be identified with even the smallest show of plausibility.

[4] iii. 5, § 1.

[5] The Alani had invaded the Roman Empire under Hadrian; and one of the minor works of Arrian is a military treatise containing the plan of a campaign to be carried on against them (Ἔκταξις κατ' Ἀλανῶν). These, however, were the Asiatic Alani.

a direction from south to north, but gives it such an enormously exaggerated extent, as to carry up its northern extremity, together with the mouth of the Tanaïs, nearly to 55° of latitude, or within little more than a degree of the parallel of the Baltic Sea,[6] just about the latitude in reality of the *sources* of that river. The effect of such an erroneous conception was of course to distort his whole map of this portion of Europe: the Palus Mæotis—thus extended through more than six degrees of latitude—became in great part the boundary between European and Asiatic Sarmatia, while the Tanaïs, which had generally been regarded as the limit between the two, was carried up to far northern regions, into which no Greek had ever really penetrated. At the same time he adhered to the old tradition which placed the sources of the Tanaïs in the Rhipæan mountains, to which he assigned a position about midway between the Palus Mæotis and the Baltic, while he transferred the name of Hyperborean Mountains to a wholly different chain in the far north, at the extreme limit of the known land. Here he placed the sources of the Rha or Volga, a river of which he was the first ancient geographer that had any definite knowledge.[7] It is curious to see how, in this part of his work, he was struggling to combine the old traditional notions of the Greeks with his more recent and accurate information, while he was throwing the whole subject into confusion by his erroneous ideas of the geography of the lands in question.

§ 10. The entirely false idea which Ptolemy had thus formed of the Palus Mæotis and the surrounding countries, is the more extraordinary as we find him possessing more accurate notions concerning the neighbouring Caspian than any

[6] We have already seen that Ptolemy placed Byzantium considerably too far to the north (in lat. 43° 5′), and this error had the necessary effect of carrying up the whole of the Euxine beyond its true latitude. But in other respects Ptolemy was well acquainted with that sea. He assigns to it a width of 5½ degrees of latitude—a very close approximation to the truth—so that he places the mouth of the Borysthenes in 48° 30′—and the northern outlet of the Cimmerian Bosporus in the same latitude. Thus far, therefore, his map is approximately correct; and his error is almost entirely due to the inordinate size which he attributes to the Palus Mæotis itself.

[7] v. 9, §§ 12, 13.

preceding geographer, and returning to the correct view entertained by Herodotus, but which had been rejected by all Greek geographers from the time of Alexander, that it was an inland sea, surrounded on all sides by land, and having no communication with the external ocean.[8] He was aware also (as has been just mentioned) of its receiving the waters of a great river from the north, to which he gave the name of Rha (the Volga), and concerning which he seems to have had tolerable information, as he describes it as forming a great bend in about the middle of its course, which brought it within a short distance of a corresponding bend of the Tanaïs.[9] But it is not likely that he had any real knowledge of its sources, and the Hyperborean Mountains were doubtless a mere fiction, in accordance with the theoretical notion that all great rivers took their rise either in a mountain-chain or a lake.

§ 11. It is unnecessary to dwell in detail upon the character of the geographical knowledge possessed by Ptolemy of the countries immediately bordering on the Mediterranean. Here he naturally possessed abundant materials, in the form of maritime itineraries or Peripli of the coasts, with land itineraries to connect these with the towns and principal points of the interior. But unfortunately, as we have already seen, there was an almost total want of astronomical observations to correct these: and even in the few cases in which such observations had been really made, they were in several instances so erroneous as to distort, instead of correcting, the

[8] Ἡ δὲ Ὑρκανία ἡ καὶ Κασπία θάλασσα πάντοθεν ὑπὸ τῆς γῆς περικέκλεισται, νήσῳ κατὰ τὸ ἀντικείμενον παραπλησίως. vii. 5, § 4. He was, however, in error in regard to its form, supposing its greatest length to be from west to east, while he underrated its magnitude, almost as much as he overrated that of the Palus Mæotis.

[9] v. 9, § 13. The Don and the Volga in fact approach within about 30 miles of one another, in lat. 49°, about 250 miles from their mouths; but from that point they diverge, the one to the S.W., to the Sea of Azov, and the other to the S.E. to fall into the Caspian.

I may take this opportunity of expressing my entire disbelief of the theory put forward by Major Wood (*The Shores of Lake Aral*, 8vo. Lond. 1876), and repeated by Dr. Carpenter in the article on the CASPIAN SEA in the *Encyclopædia Britannica*, 9th edit. vol. iv. p. 179, that the Volga in early times fell into the Don, and thus discharged its waters into the Palus Mæotis, instead of the Caspian: and afterwards changed its course and

notions otherwise entertained.[1] The consequence is that, even for countries so well known as Greece and Italy, Ptolemy's geographical positions differ widely from the truth, and the maps founded upon them were calculated grossly to mislead all those geographers who for many centuries afterwards continued blindly to follow their guidance.

A glance at the map will show better than any description the nature and extent of the distortions arising from these errors. But it may be worth while just to point out a few of the most important. With regard to Italy, for instance, the position of Rome, as we have seen, was correctly determined in latitude; and that of Massilia, which was also known, would give an approximation to that of the nearest adjoining points of Italy.[2] But the longitudes, as we have seen, were greatly in excess, and the only means of combining the two was by giving to Italy an undue extension towards the east, or *pulling out* the figure of the peninsula on the map, so as to give it a general direction but little to the southward of east, through more than 13 degrees of longitude, and then bringing it down by a sudden bend to the south, so as to correspond with the position assigned on independent grounds to the Sicilian Strait.[3] Thus the promontory of Leucopetra—the southernmost point of the peninsula—was brought on the same meridian with the mouth of the Aternus in the Adriatic,

flowed into the Caspian. Such an hypothesis appears to me extremely improbable on physical grounds, and there is certainly no vestige of ancient authority in its favour.

[1] The erroneous positions assigned even to such important and well-known cities as Carthage and Byzantium have been already pointed out; and the effect of the former of these errors upon the supposed position of Sardinia and Corsica. (See above, p. 561.)

[2] At the same time he was wholly unaware how far the northern coast of the Mediterranean was indented by the deep Gulf of Genoa, so that he actually places Genoa itself more than half a degree to the *south* of Massilia, instead of more than a degree to the *north* of it.

[3] The influence of this error may be traced even in modern maps down to the last century. The *Analyse Géographique de l'Italie* by D'Anville (published in 1744) was the first work in which the geography of Italy was established on a sound scientific basis. In the maps published by M. Sanson in the 17th century Nice was placed more than two degrees and a half west of its true position, while Venice and Ravenna were more than 1½ degree too far west, though Rome, which is very nearly in the same longitude with Venice, was correctly fixed.

while Naples was placed nearly 3½ degrees to the east of Rome, and only 2⅓ degrees west of the Iapygian Promontory, from which it really differs by more than 4 degrees of longitude.

The form and position of the Adriatic, which was known to be parallel and in a certain sense co-extensive with the peninsula of Italy, was necessarily shifted so as to correspond with the position erroneously ascribed to the latter;[4] and as there were no fixed points, independently determined, on the other side of the Adriatic, to correct this, the effect was to derange the whole geography of the adjoining countries. But in these wild and comparatively little known regions, the fact would not be readily detected: and the result was merely to give an undue extent to the broad tract which intervenes between the Adriatic and the Euxine.

§ 12. Ptolemy's map of Greece, though still strangely defective according to modern ideas, undoubtedly presents a very considerable advance upon those of his predecessors. He had indeed a very erroneous idea of the *orientation* of northern Greece, which he still conceived to lie in the same general direction—nearly from W.N.W. to E.S.E.—from the Acroceraunian Promontory in Epirus to Cape Sunium in Attica.[5] But this error was due in great measure to that undue extension of his longitudes, which had produced a similar effect in the case of Italy, for, while he assigns with tolerable correctness the interval of *latitude* between the two headlands at the extreme points of his supposed line, he places them at not less than 9½ degrees of longitude apart, the real distance being

[4] Thus the head of the Adriatic is carried so far to the westward, that the mouth of the Po, which is in reality almost exactly on the same meridian with Rome, is placed nearly two degrees to the west of it; and a similar displacement affects the whole coast of Venetia, Altinum, at its north-western angle, being removed still farther to the west.

[5] There is no doubt that in thus arranging the localities of northern Greece, Ptolemy was influenced in a great degree by the statement of the eminent astronomer, Eudoxus of Cnidus, which had been adopted by Strabo (see Chapter XXI. p. 269), and was doubtless received as a fixed principle by Greek geographers, that the south coast of Northern Greece did not depart very widely from a straight line drawn from the Acroceraunian promontory to Cape Sunium (Strabo, ix. 1, § 1, p. 390).

less than 5 degrees! On the other hand he correctly placed Cape Sunium considerably to the north of Cape Malea,[6] and had altogether a much more accurate general idea of the form and position of the Peloponnese, which, as we have seen, had been strangely misconceived by Eratosthenes and Strabo.

§ 13. Returning again to the northern regions of the known world, we find that Ptolemy undoubtedly possessed information concerning the north of Asia considerably more extensive than had been accessible to earlier geographers: but for the most part in so vague a form as to be of little real value. The vast tract which had been comprised by previous writers under the name of Scythia, he considered as divided into two portions by a mountain range, striking off at right angles from the great backbone of Asia, that separated the plains of Scythia on the north from Ariana and India on the south: the existence of which as a continuous mountain-chain traversing the whole continent from one end to the other he assumed, like Eratosthenes and Strabo, as a fundamental fact in the geography of Asia. It was to this transverse ridge, running from south to north, that he applied the name of Imaus,[7] which had been known to former geographers only as one of the manifold appellations of the central chain itself.[8] It had

[6] Strabo, as we have seen (Chapter XXI. p. 269), contented himself with stating that Sunium was *not much* farther to the north than Cape Malea (*οὐ πολὺ ἧττον μεσημβρινώτερον ὂν τῶν Μαλεῶν*. ii. 1, § 40). Ptolemy places it in 36° 45′, Cape Malea in 35°, and Cape Tænarus, which he correctly reckoned the most southerly point of the Peloponnese, in 34° 35′.

[7] This he states on more than one occasion distinctly. Thus in vi. 14, § 1 he describes Scythia within the Imaus as bounded *on the east* by the Imaus Mountains, which run up to the north nearly along a meridian line (*ἀπὸ δὲ ἀνατολῶν τῷ πρὸς τὰς ἄρκτους ἀνιόντι Ἰμάῳ ὄρει κατὰ μεσημβρινὴν πως γραμμήν*. See also vi. 13, § 1; 14, § 8). I am at a loss to understand how Colonel Yule can dispute the fact that Ptolemy described the Imaus as "a meridianal range." (See *Proceedings of Geogr. Soc.* for 1877, p. 136.)

[8] The name is distinctly mentioned by Strabo (xi. p. 511; xv. p. 689) among the different appellations which were given *by the natives* to the great chain forming the continuation of the Taurus to the eastern sea; and he considered it as being specially applied to the extreme *eastern* portion of the range, where it ended in the ocean. Pliny also applied it in the same sense (vi. 17, § 60). Its arbitrary transference by Ptolemy to the range of the Bolor or Pamir, in a distant part of Asia, is a striking instance of the manner in which ancient geographers felt themselves at liberty to deal with such appellations. Ptolemy gives the name of Emodus to the easternmost part of the great range,

become known at this time from its being traversed by the important route of commercial intercourse with Sera, to which we have already adverted; and it was doubtless owing to the vague accounts thus transmitted of the vast extent of the regions to the east of this limit—tracts similar in character to those of Scythia previously known, and inhabited in like manner only by nomad tribes—that Ptolemy was led to establish the distinction between Scythia within the Imaus, and Scythia beyond the Imaus, which long continued to be recognized in all geographical treatises. The distinction is indeed one founded in fact, the range of the Bolor, or Pamir, which has a general direction from south to north, forming so important a natural barrier, that it has for many centuries constituted the limit between Chinese Tartary and Turkestan.[9]

§ 14. But while Ptolemy had in this instance introduced one really valuable addition to the geography of Central Asia, it must be admitted that his knowledge of the regions on either side of the Imaus was of the vaguest possible character. Eastward of the Rha (Volga), which he regarded as the limit between Asiatic Sarmatia[1] and Scythia, and north of the Iaxartes—which he describes like all previous writers as falling into the Caspian[2]—he had properly speaking no geographical knowledge whatever. Nothing had reached him beyond the

and only applies that of Imaus to the portion immediately adjoining the arm that strikes off to the north (vi. 13, § 1).

[9] It is only quite in modern days that this important range has been thoroughly explored and described. A full account of it will be found in Colonel Yule's Essay, prefixed to the second edition of Wood's *Journey to the Sources of the Oxus* (London, 1872). See also an interesting discussion upon the subject in the *Proceedings of the Geogr. Soc.* for 1877, pp. 136–140.

[1] Ptolemy gives the name of Asiatic Sarmatia—a geographical term unknown to earlier writers and probably invented by himself—to the district between the Tanaïs and the Volga.

[2] vi. 14, § 2. It is remarkable as showing the untrustworthy character of his information concerning these countries, notwithstanding the advance he had made upon some points, that among the rivers flowing into the Caspian between the Iaxartes and the Oxus, he places the Polytimetus (the river of Sogdiana), which had long before been correctly described by Aristobulus and Strabo as being lost in the sands (Strabo, xi. p. 418), and could never by any possibility have entered the Caspian. But the statement of Ptolemy concerning the Iaxartes derives greater interest from his being the first author who mentions the Oxiana Palus, which several modern writers have sought to identify with the Sea of Aral. See Note E, p. 641.

names of tribes, reported at second hand, and frequently derived from different authorities, who would apply, as is almost always the case in similar circumstances, different appellations to the same tribe, or extend the same name to one or more of the wandering hordes who were thinly dispersed over this vast extent of territory.

Among the names thus accumulated—a compilation that is probably as worthless as that of Pliny, notwithstanding its greater pretensions to geographical accuracy—we find some that undoubtedly represent populations really existing in Ptolemy's time, such as the Alani, the Aorsi, &c., associated with others that were merely poetical or traditional, such as the Abii, Galactophagi, and Hippophagi; while the Issedones, who were placed by Herodotus immediately east of the Tanaïs, are strangely transferred by Ptolemy to the far east, on the very borders of Serica; and he has even the name of a *town*, which he calls Issedon Serica, and to which he assigns a position in longitude 22 degrees east of Mount Imaus, and not less than 46 degrees east of Bactra![3] In one essential point, as has been already pointed out, Ptolemy's conception of Scythia differed from that of all preceding geographers, that instead of regarding it as bounded both on the north and east by the sea, and consequently of comparatively limited extent, he considered it as extending without limit in both directions, and bounded only by "the unknown land," or in other words limited only by his own knowledge.

§ 15. But, as we have already seen, he possessed, in common with his immediate predecessor Marinus, something like defi-

[3] vi. 16, § 7. According to his calculation it was in 162° E. longitude, reckoning from the meridian of the Fortunate Islands. Of course it would be a mere waste of time to attempt to guess what was the place to which he applied the name.

It is a strong instance of the utterly untrustworthy character of those statements in the eighth book, which have been so often regarded as really based upon scientific information, that Ptolemy gives in regard to this supposed city of Issedon Serica, which, if it had any real existence at all, had certainly been enormously misplaced, the length of the solstitial day and the distance in hours of longitude from Alexandria, just as if he had definite and trustworthy observations to rely on.

nite information concerning the country that adjoined Scythia on the east, which had long been vaguely known both to the Greeks and Romans under the name of Serica, or Land of the Seres. Utterly erroneous as were the conclusions at which he had arrived concerning its geographical position, and the longitude he assigned to its capital city of Sera, there remained the important fact of the existence of such a city, as a great emporium of trade, from whence silks were brought by caravans which employed seven months on the journey thither.[4] It must have been from some of these traders that either Ptolemy or Marinus had learnt also the names of several other cities—he enumerates fifteen in all—as well as of ranges of mountains, and the more important fact that the whole country was traversed by two great rivers, to which he gives the names of Œchardes and Bautisus.[5] These he describes as having their sources in mountain ranges on the confines of Serica and Scythia. It is strange that with this amount of information he had not learnt, or did not arrive at the conclusion, that Serica itself must be bounded on the east by the ocean.[6] But he was probably misled, as the Greeks so often were, by his own preconceived system, and just as Eratosthenes and Strabo had *assumed* the existence of the ocean in this direction, without any real information on the subject, he, on the contrary, *assumed* the existence of continuous, though unknown, land, in accordance with the hypothesis which he had adopted from Hipparchus.

§ 16. South of the Seres, and occupying in consequence the south-eastern angle of Asia, Ptolemy placed the people to whom he gave the name of Sinæ. This juxtaposition appears to have been adopted, as a theoretical conclusion, by Marinus; and was confirmed in a general way by the traders with India,

[4] There is no reason to reject the statement of Marinus, or rather of his informant, as to the *time* employed by caravans on this journey, though we may safely refuse to admit his inference as to the distance.

[5] Ptol. vi. 16.

[6] It seems especially strange that his information concerning the two great rivers Œchardes and Bautisus, which he describes as traversing the whole land of Serica, should not have led him to the conclusion that they must have their outflow into the sea.

from whom Ptolemy, as he expressly tells us, had himself derived additional information concerning this part of Asia.[7]

There is indeed no part of his work where we see evidence of greater advance in geographical knowledge, though still in so vague and indefinite a form, as renders it very difficult to combine and interpret his statements in a satisfactory manner.

We have already seen what a great advance had been made in the knowledge of the countries on the Indian Ocean before the time of Marinus of Tyre; and that that geographer was not only aware of the existence of extensive lands beyond the mouth of the Ganges and the Gangetic Gulf,[8] to which the great river gave its name, but had obtained such information concerning them as could be derived from the communications of ordinary unscientific traders. This information pointed to the existence, beyond the Gangetic Gulf, of a peninsula or promontory, to which they gave the name of the Golden Chersonese, and far beyond that again, in a still easterly direction, of an emporium or important place of trade called Cattigara. This last is called by Ptolemy the port of the Sinæ, and he places the capital of the country, which he calls Sinæ or Thinæ, at a comparatively short distance inland. Whether these last statements are derived from Marinus or not, we are not informed, but the question is one of little importance.[9] It is clear at all events that the farthest land in the Eastern Ocean to which Greek mariners had yet penetrated was known to them as the land of the Sinæ, and that it had a metropolis

[7] i. 17, § 5.

[8] The distinct recognition of this important feature in the geography of Southern Asia is in itself a marked step in advance. The author of the Periplus had no clear notion on the subject; and though he admits the existence of a land called Chryse and an island of the same name beyond the Ganges towards the east (see Chapter XXV. p. 475), there is nothing to indicate his conception of their position with regard to India; or indeed that he had any definite idea of their position at all.

[9] No mention is made of Thinæ, in the passages where Ptolemy is directly discussing the statements of Marinus; but we are certainly not entitled to infer that it was not mentioned by the elder geographer; the *name*, as we have seen, was already known to the author of the Periplus, and it cannot be doubted that it was familiar to Indian traders in the days of Marinus. Nor could Ptolemy have failed to notice so important an omission on the part of his predecessor.

of the same name, which was reported to have had walls of brass, but this, with other marvellous tales concerning it, was expressly discredited by the informants of Ptolemy.[1]

There is certainly no reason to disbelieve altogether the information thus furnished, nor to refuse to admit the fact of the adventurous voyagers of these days having carried their commercial enterprises far beyond the limits which were known in the preceding century. But when we come to attempt to lay down the geographical data reported by Marinus, and made use of by Ptolemy, upon a map, we shall find the results so utterly at variance with the real configuration of the coasts and countries in question, that it becomes hopeless to identify the localities mentioned, and we are left to the merest conjecture in regard even to the most important points.

§ 17. Nor is this difficulty confined only to the newly discovered countries beyond the Gangetic Gulf. By a strange fatality, while in other respects the amount of information concerning India itself—using the term in its old sense, to designate the land from the Indus to the Ganges—had been vastly increased in the time of Ptolemy,[2] the geographical knowledge of its position and conformation had been so far from keeping pace with this improvement, that it had actually deteriorated; and both Marinus and Ptolemy fell into errors in this respect, which had the effect of distorting their whole map of Southern Asia.

We have seen that the author of the Periplus correctly conceived the western coast of India as assuming a general direction from north to south, after passing Barygaza, and he supposed it to retain this same direction as far as the southern extremity of the peninsula, which was opposite to Taprobane. He indeed erred on the side of excess, by prolonging the

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[1] vii. 4, § 6. After giving in his ordinary manner the position of "the metropolis" Sinæ or Thinæ, he adds: οὔτε μέντοι χαλκᾶ τείχη φασὶν αὐτὴν ἔχειν, οὔτε ἄλλο τι ἀξιόλογον.

[2] Concerning the details of Ptolemy's map of India, see Note F, p. 642.

western coast considerably to the south of Cape Comorin, which forms its real termination in that direction. Marinus on the other hand, while he agreed in regarding Cape Cory, which was the point immediately opposite to Ceylon, as the southernmost point of the peninsula,[3] was led into the far more important, and inexplicable, error of ignoring almost entirely the great projection of the Indian peninsula to the south, so that he actually placed Cape Cory only four degrees of latitude to the south of Barygaza, and only 6½ degrees farther south than the mouths of the Indus.

It is very difficult to conceive the origin of so great a mistake as this. The great extension of the peninsula to the south was a fact which, one would have thought, must have forced itself upon the attention of all navigators. Nor can the error be explained by supposing this extension to have been transferred in a wrong direction, as we frequently find the case: for while the interval of latitude between the mouths of the Indus and Cape Cory is thus enormously underrated, the difference of longitude assigned to the two does not exceed 15 degrees, while the real difference amounts to not less than 11 degrees. Allowing therefore for the system of graduation adopted by Ptolemy, his estimate of the longitude is only about 90 G. miles in excess, while he curtails the extension in latitude by 8½ degrees or more than 500 G. miles.

§ 18. But it is curious to find this enormous error associated with another, equally extraordinary, but of an opposite tendency, in regard to the neighbouring island of Ceylon. We

[3] The determination of Cape Cory (Κώρυ ἄκρον), which assumes so important a place in the geography of Marinus and Ptolemy, fortunately admits of no doubt. It was the headland that separated the Colchic and Argalic Gulfs (both of which are already mentioned by the author of the Periplus), and corresponded clearly to the narrow point that runs out towards Ceylon, between the Gulf of Manaar and Palk Bay, and is connected with the string of islands and shoals stretching almost across the strait. As this was the nearest point of the main land to Ceylon, it was natural to regard it as the most southerly; and although Ptolemy in his tables assigns it a latitude of 13° 20′ N. lat., while he places Cape Comaria, undoubtedly the same with Cape Comorin, in 13° 30′ (vii. 1, §§ 9, 11), it is evident from the importance attached both by him and Marinus to Cape Cory, that it was regarded as practically the southern extremity of India.

have seen that from the time of the earliest notices of the island of Taprobane, there was a tendency among Greek writers to exaggerate greatly its dimensions and extent, while their ideas of its position were extremely vague. Even the author of the Periplus describes it as extending far to the west, almost to the coast of Azania.[4] Ptolemy on the contrary had a fairly correct notion of its position with reference to the neighbouring continent, as well as of its general form and outline:[5] but had conceived such an exaggerated estimate of its size, as to extend it through 15 degrees of latitude, and 12 degrees of longitude.[6] It was thus brought down more than two degrees to the south of the equator, while its northern extremity was at the same time carried up to 12½ N. lat., nearly three degrees north of its true position. Such an astounding misconception is the more extraordinary as Ptolemy gives at the same time a mass of information concerning the island, which surprises us by its copiousness, including not merely a complete *periplus* of its coasts, with the names of the headlands, rivers, and seaport towns, but also the names of many cities and tribes in the interior.[7] Such an amount of details proves that he had what he considered good hearsay information:[8] and probably,

[4] *Periplus*, § 61. See Chapter XXV. p. 474.

[5] This has been justly remarked by D'Anville (*Antiquité Géographique de l'Inde*, p. 144), and presents a striking contrast with the utterly erroneous form given to the peninsula of India. It is certain that any one, looking at the figure of Taprobane on the map of Ptolemy, without reference to its scale or graduation, would be struck with its general resemblance to the truth. The same observation is made also by Sir Emerson Tennent (*Ceylon*, vol. i. p. 560).

[6] Ceylon actually occupies less than 4 degrees of latitude in length, and just more than 2 degrees of longitude in its greatest breadth. Its area is in fact somewhat less than that of Ireland. The dimensions assigned it by Ptolemy would make it about *fourteen* times as large as the reality. (D'Anville, *l. c.*)

[7] Ptol. vii. 4. Colonel Yule justly observes in the notice accompanying his map of India: "The number of names which Ptolemy gives us on this island, including rivers and promontories, promises a facility of identification which is not realized. It seems difficult with such landmarks to go very far astray, yet thoroughly satisfactory identifications are very few."

[8] That this information was derived from merchants or traders may be inferred from the circumstance that he adds also—a very unusual exception in his work—a notice of the productions of the island, including rice, honey, ginger, beryls and hyacinths, gold and silver, as well as other metals; and that it was the native place of elephants and tigers. The absence in this list of all mention of cinnamon seems to show conclusively that it was not one of the articles then exported from the island.

if his authorities had been preserved to us, we should have been able to discover the origin of his strange misconception in respect to the dimensions of the island, which at present remains inexplicable.[9]

§ 19. But if we find Ptolemy's geographical conceptions of countries comparatively well known, so strangely erroneous, we must be prepared to meet with at least equal distortions of the regions beyond the Ganges, concerning which he is our only ancient authority. His information was indeed derived in great part from Marinus, but we learn distinctly that in this portion of his work he had made use also of what he considered as later and better authorities:[1] and it is impossible for us in all cases to discriminate between his two sources of information. It is clear however that he derived from the Tyrian geographer his principal *data* concerning the Gangetic Gulf, and the lands immediately beyond it. These have been already cited.[2] The most important point to determine would be the position of Palura, which was at the western limit of the Gangetic Gulf, and from which point navigators bound for the Golden Chersonese and Cattigara struck directly across the Gulf, in an easterly direction, for a distance of 13,000 stadia, to a city called Sada, on the opposite side of the bay.[3] It is probable from this statement that the real position of Palura must have been somewhere in the neighbourhood of Masulipatam, between the mouths of the Kistnah and the Godavery, from whence a due easterly course would have brought the navigators across to the coast of Ava.[4] But

[9] No notice is found in this detailed description of the "vast lake," which, according to the hearsay information recorded by Pliny, must have formed one of the most remarkable features of the island (Plin. *H. N.* vi. 22, § 86). More accurate knowledge of the interior must soon have shown that there was no room for any lake of considerable dimensions.

[1] i. 17, § 5.

[2] See Chapter XXVII. p. 534.

[3] Ptol. i. 13, § 7. This is in any case a great exaggeration. The width of the Bay of Bengal, from Masulipatam to the S.W. point of Ava, does not exceed 13 degrees of longitude, or about 750 G. miles. Ptolemy reduces the interval to 17½°, or 8540 stadia, but he admits that this reduction is altogether arbitrary.

[4] Some trace of the same name as that of the modern city is perhaps to be found in that of Mæsolia, given by Ptolemy to the coast country just before reaching Palura, in which he places

the position assigned it by Ptolemy (as calculated from the statements of Marinus, subject to his own corrections) is actually two degrees *to the south of Cape Cory*, and 11 degrees to the east of it, so as to lie about midway between Ceylon and the Malay Peninsula! Such an instance as this is calculated not only to destroy all faith in Ptolemy's determination of precise positions in these seas, but to show the utter impossibility of establishing any parallel between two things so incongruous, as his geographical conception of the countries in question, and the real conformation of the coasts of Asia.

§ 20. But if we abandon the attempt to explain or reconcile his positive geographical data, it will certainly appear that his information concerning the countries beyond the Ganges contained important elements of truth, though disguised in a very confused and unintelligible form. Thus we find him placing on the east side of the Gangetic Gulf, a region which he terms the Land of Silver,—in which was the port of Sada, mentioned by Marinus, as well as that of Temala, evidently answering to the Tamala of the same author—beyond that, a people whom he terms Besyngeitæ, and describes as cannibals; and south of these again a tract which he terms the Golden Chersonese, extending through not less than 8½ degrees of latitude, so as to reach more than 4 degrees south of the equator. There can be little doubt that this is the same with the Chryse or Golden Island of the Periplus[5]—indistinct notions of which are found even in earlier writers: and there is also every reason to regard it as identical with the Malay peninsula, which is indeed so slightly connected with the mainland, that

"the point of departure of navigators sailing to Chrysè" (*τὸ ἀφετήριον τῶν εἰς τὴν Χρυσῆν ἐμπλεόντων*. vii. 1, § 15). He mentions also a river of the name of Mæsolus, which may be supposed to represent the Kistnah; but all such identifications rest upon very slender foundations.

Colonel Yule (p. 23) considers Palura to have been situated considerably farther north, a few miles above Ganjam (in lat. 19° 27′), where a place called Palur is mentioned by De Barros and Linschoten. Here the evidence of name seems strong; and though the higher one ascends the coast the more erroneous do the estimates given by the Periplus and by Ptolemy become, these are in any case greatly exaggerated and of little value.

[5] *Peripl.* § 63.

it might easily have been taken for an island, and the knowledge of its peninsular character argues comparatively correct information.[6]

Beyond this again Ptolemy was aware of the existence of an extensive gulf, which he terms only the Great Gulf, and which may be fairly taken to correspond in a general way with the Gulf of Siam.[7] On the opposite coast of this he placed the land of the Sinæ, and the emporium of Cattigara, which was the most distant point frequented by Greek merchants in his day. But here his geography was completely at fault: and it was evidently in order to suit his preconceived theoretical conclusions, that instead of making this coast of the Sinæ, after passing the Great Gulf, trend towards the north, as it really does, he carried it directly *towards the south*, so as to place Cattigara not less than 8½ degrees south of the equator![8] He thus supposed the land of the Sinæ to form the eastern limit of the Indian Ocean, and he assumed the land, though unknown, to be indefinitely prolonged from thence until it joined on to the similar extension of the coast of Africa towards the east from Cape Prasum.[9]

§ 21. It is certain that if the navigators, after quitting the Golden Chersonese, crossed a great gulf, the only part of the

[6] The mode in which Marinus speaks of the Golden Chersonese in the passage cited from him directly by Ptolemy would lead to the conclusion that he meant to designate by the term some definite locality, not an extensive region; but it is very probable that the name was thus applied to a particular port or emporium, just as that of Arabia Felix was to Aden. Ptolemy at all events applies the term in a wider and more general sense.

[7] vii. 2, § 7. Marinus appears to have been ignorant of the existence of this great gulf; as the authority cited by him for his view of this part of the coast describes it as extending eastwards, or facing the south, for a distance of 20 days' voyage from the Golden Chersonese (ap. Ptol. i. 14, § 1). Such an expression is wholly at variance with the reality, whatever be taken as the point of departure; and Ptolemy seems to have had later and better information, though he unfortunately misconceived its meaning.

[8] vii. 3, § 3.

[9] This he distinctly states (vii. 3, § 6). After describing the land of the Sinæ, and fixing the position of the capital, which he states as definitely as if it were some well-known city on the Mediterranean, he adds: "From Cattigara towards the west, the boundary is formed by the unknown land surrounding the sea called Prasodes as far as the promontory of Prasum, from which begins, as has been described, the Batrachian Gulf, connecting the land with the promontory of Rhaptum and the southern parts of Azania."

mainland that they could reach would be the coast of Cambodia or Cochin China, and it is here therefore that we must in all probability look for the Sinæ of Ptolemy. But his geographical ideas on the subject were so confused that he conceived them as lying to the south of the Golden Chersonese instead of to the north of it; notwithstanding that he appears to have learnt from his informants in a general way that the land of the Sinæ lay due south of Serica, and adjoined that country on the north: a statement perfectly correct if we suppose the former to represent the eastern portion of India beyond the Ganges, or the modern empire of Annam.[1]

It cannot be denied that there are great difficulties in supposing the information obtained by Ptolemy to have really extended so far to the east as the countries thus indicated: the difficult and circuitous character of the navigation, arising from the peculiar conformation of the coasts; and the absence of all notice of so remarkable a geographical feature as the Straits of Malacca, or of the vast island of Sumatra on the opposite side of them—are *primâ facie* objections to the proposed identifications, which it is difficult to surmount. But on the other hand the *general* agreement of the statements reported by Ptolemy, when divested of the false garb in which he has disguised them, is too complete to be easily accounted for on any hypothesis but that of a real foundation in authentic information. At the same time they were undoubtedly too vague and imperfect to admit of anything more than a very general identification. The attempts to determine the position of the port of Cattigara, or the capital city of Thinæ, can only rest on the merest conjecture.[2]

[1] In placing the land of the Sinæ in this quarter, I admit fully the force of the argument urged by Colonel Yule, that the *name* is identical with that of Thsin, from which the modern word China is derived, and which explains the occurrence of the two forms Thinæ and Sinæ. But it does not appear to me necessary therefore to assume that the land so called was actually a part of the modern China. How easily the *name* might be extended to other regions in that part of Asia is sufficiently shown by the modern appellation of Cochin China applied to the very country in question.

[2] Such are the suggestions of Forbiger, who would identify it with Canton, while Mannert, guided by the utterly untrustworthy numbers in the

§ 22. It is strange also that no indication appears to have reached the ears of Ptolemy of the vast archipelago of islands—many of them of very large size—which so closely adjoined the Malay peninsula to the east. He has indeed the names of several islands in these seas, but none of them of any considerable size, except one to which he gives the name of Iabadius or Sabadius (the reading is uncertain), which he represents as two degrees of longitude in length, and describes as very fertile and containing abundance of gold, with a capital city named Argyrè (or the Silver City) at its western extremity.[3] This has been generally identified with Java, but the resemblance of name is dubious, and the other statements concerning it would certainly apply better to Sumatra.[4] It appears indeed absolutely incredible that he should have been acquainted with the smaller and more distant of these two great islands, and have had no information concerning the larger one, which is so much closer to the Malay Peninsula.

We have already seen that he conceived the eastern portion of Asia, in which he placed the land of the Sinæ, to be connected by continuous land with the east coast of Africa, so that he supposed the Indian Ocean to be surrounded on all sides by land. For this strange assumption he had undoubtedly no foundation in any erroneous information. It was a mere hypothesis, or rather a theoretical assumption, which had been already made by Hipparchus, in days when these eastern seas were almost entirely unknown, and retained—on what grounds we are at a loss to imagine—by Ptolemy, who adapted to it, as best he could, the extended information of his own days.

§ 23. Ptolemy's account of Arabia is in many respects a characteristic instance both of the merits and defects which distinguish his work in general. From its proximity to Alexandria, and from the greatly increased amount of naviga-

tables of Ptolemy, places it in the island of Borneo!

Colonel Yule justly remarks that "we see no means of determining Kattigara;" but he seeks to place it in the south of China proper; a suggestion for which I can see no foundation.

[3] vii. 2, § 29.

[4] See Note G, p. 643.

tion in the Red Sea, and around the shores of the Erythræan from thence to India, he naturally possessed an amount of information concerning the coasts of that great country far superior to that of his predecessors: and the *periplus* which he has given of these coasts is at once copious and accurate. Even his idea of its geographical configuration makes a near approach to the truth, and shows a marked improvement upon that of the Periplus of the Erythræan Sea, little more than half a century before. This is especially conspicuous in respect to the projecting form of the coast of Oman, a marked feature in the geography of Arabia, which had been ignored or misunderstood by all previous authorities.[5]

But the case is quite otherwise with regard to the interior of the country: a region that must have always been, in ancient as well as modern times, peculiarly difficult of access to the traveller. It is true that the whole peninsula was traversed, as early as the time of Eratosthenes, by caravan routes from the fertile regions of Yemen and the frankincense-bearing district of Hadramaut, to Gerrha on the Persian Gulf, and Petra near the head of the Red Sea,[6] and there can be no doubt that these routes continued to be frequented down to the days of Ptolemy. But all such lines of traffic must, from the circumstances of the case, have been always limited to certain definite tracks, and between these lay broad tracts of country which could never have been inhabited by anything but wandering Bedouin tribes. Yet we are startled with finding in Ptolemy's tables, not merely long lists of tribes, which may (or may not) be based upon something like authentic information concerning the *names* of these fluctuating and wandering populations, but still longer lists of the towns or villages of the interior,[7] to

[5] The promontory of Maceta or the Macæ (Cape Mussendoon) was indeed familiar to all geographers from the time of Nearchus, on account of its bounding the entrance to the Persian Gulf; but the important headland called Ras el Hadd, which forms the eastern angle of Oman, and of the whole Arabian peninsula, is first mentioned by Ptolemy under the name of Corodamum (vi. 7, § 11).

[6] See Chapter XVI. p. 647.

[7] Thus he gives (in vi. 7, §§ 27–42) a list of not less than 114 "cities" or villages in Arabia Felix, as well as one of twenty-six others in Arabia Deserta

each of which he assigns a definite locality and a fixed astronomical position. Yet it is certain that no such fixed settlements ever existed in a large part of the territories to which they are assigned. If this enumeration of names is really based upon any definite foundation at all, the localities so designated could have been merely wells which formed halting places for the Bedouins, or fertile spots in the *Wadies*, where they pitched their tents and pastured their flocks. But any accurate determination of such localities was obviously out of the question, and it is a natural surmise that they were merely entered at random on the map with the view of filling up vacant spaces. At all events it may safely be asserted that they correspond to nothing in reality: and that the apparent fullness of Ptolemy's information concerning the Arabian peninsula serves only to disguise the imperfection and scantiness of his actual knowledge.[8]

§ 24. We have seen that his knowledge of the eastern coast of Africa did not extend farther than that of Marinus, and was limited by the headland of Cape Prasum, which he placed in 15½ degrees of south latitude. But this position was, according to his own showing, a mere arbitrary assumption, based upon its supposed distance south of the well-known emporium of Rhapta, which, as we learn from the Periplus, as well as from Ptolemy's own account, had been long frequented by the Greeks. The coast therefore from this point northwards was really well known, and the position assigned by Ptolemy to Rhapta of 7 degrees south of the equator is just about correct.

(v. 19, §§ 5–7). It is to be observed that Ptolemy, as well as Eratosthenes and Strabo before him, applies the latter name only to the tract intervening between the mountainous region of Arabia Petræa on the west, and Mesopotamia and Babylonia on the east; and includes—strangely enough according to our ideas—the whole peninsula of Arabia, with its vast tracts of desert, under the name of Arabia Felix.

[8] We have seen that a large amount of information concerning Arabia, though in a very confused form, is already found in Pliny (see Chapter XXIV. p. 423), but as usual so ill-arranged and clumsily put together, that it is difficult to extract from it any clear result. With Ptolemy, on the contrary, his definite form and arrangement enable one readily to discern both the accuracy of some parts of his description and its erroneous character in others.

Between the adjoining promontory, to which he gives the name of Rhaptum,[9] and that of Prasum, he supposed that there intervened an extensive gulf, which he terms the Batrachian Sea, or according to a more probable reading, the Brachian (i.e. the shallow, or shoaly) sea.[1] Its shores were inhabited by Ethiopians, who were reported to be cannibals.[2]

With regard to the continent of Africa Ptolemy undoubtedly possessed information that had not been accessible to any preceding writer, except Marinus, and though the conclusions he derived from these authorities were in fact of a very vague character, yet being expressed, as usual, in a definite and apparently authoritative form, they have frequently been received as indicating an amount of knowledge that it was impossible he should really possess. There is indeed no portion of his work which has given rise to so much discussion in modern times, and none in regard to which his authority has been more absurdly over-estimated. The increased knowledge of the interior of Africa, which has been the result of European explorations in recent times, has enabled us to form a much better judgement of the real value of Ptolemy's statements on the subject, than was possible to geographers like D'Anville and Rennel. But much obscurity still hangs about

[9] iv. 7, § 12. According to Ptolemy Rhapta itself was not a port, but the capital of the country at a short distance from the sea, while he gives the name of Rhaptum to a promontory nearly a degree and a half farther south (τὸ Ραπτὸν ἀκρωτήριον). No mention of this is found in the Periplus, but if Rhapta itself be correctly placed opposite to Zanzibar, the promontory may probably be that called Cape Poonah, a short distance to the south of it.

[1] The name is written Βατράχεια in vii. 4, § 6; but in iv. 8, § 1, where it is written τραχεῖα in the ordinary editions, several MSS. have βραχεῖα, and the words which follow διὰ τὰ βράχη are conclusive in favour of that reading.

[2] In connection with Cape Prasum Ptolemy mentions the island of Menuthias, which he describes as lying off it towards the north-east (ᾧ παράκειται ἀπὸ θερινῶν ἀνατολῶν), but places it not less than five degrees of longitude and three degrees of latitude from that headland. The island called Menuthias in the Periplus (as we have seen) lay at a short distance from the mainland, and was certainly identical either with Pemba or Zanzibar (Chapter XXII. p. 11); but it is clear that Ptolemy must apply the name to some other island, probably to one of the Comoro Islands, which lie far out to sea. The supposition that the great island of Madagascar was that meant is utterly improbable; he could hardly have had any information concerning it, without having some idea of its magnitude.

the whole matter, and it is impossible to separate with any certainty the statements really derived by Ptolemy from the reports of traders or other travellers, from the theoretical conclusions resting on his own inferences. We have already seen how utterly erroneous was the position which he assigned to Agisymba, a conclusion which could hardly fail to vitiate his whole map of the interior of Africa.

§ 25. The great problem of the origin and sources of the Nile had continued to occupy the attention of the learned at Alexandria from the days of Eratosthenes to those of Ptolemy: and several authors had written expressly upon the subject. But the only real advance that had been made in knowledge of the river was that derived from the expedition of the Roman centurions under Nero, who had ascended the course of the White Nile, as far as the great marshes which, as we now know, oppose so serious an obstacle to any farther progress.[3] Ptolemy however throws a quite new and unexpected light upon the subject, and has statements of which the true value can only be appreciated by the aid of the most recent discoveries. Unfortunately the peculiar form of his work prevents these from appearing in a connected and continuous form, and is calculated to give rise to some misconception and confusion. After describing in detail the course of the river as far as the Upper or Greater Primis—clearly the same with the Premnis of Strabo (which he places in 17° N. lat.) he proceeds to say that, above this, the region of Meroë was formed into an island by the river Nile upon the west, and by the river Astaboras upon the east. Above this again, after passing Meroë and three other towns, came the junction of the Nile and the Astapus; which he places in 12° of N. latitude, about 4½° south of Meroë. Half a degree south of this he places the junction of the Astaboras and the Astapus: and again at a considerable distance farther south, only 2° north of the equator, he tells

[3] See Chapter XXIII. p. 348. These marshes begin about nine degrees north of the equator.

us was the point where the Nile first became one united stream by the junction of the two rivers which flowed from two lakes situated still farther south. The one of these lakes he places in 6° of south latitude, and 57° of longitude, the other in 7° of south latitude, and 65° of longitude—the point of junction being in longitude 60°, or a degree and a half west of Meroë.[4] Here it is clear that though he was led into error in one point, by the assumption that the island of Meroë must be really an island, and in order to make it so has supposed the Astapus to join the Astaboras, in a manner that was geographically impossible, all the rest of his description is clear and consistent.[5] But the mention of the two lakes, in which the two arms of the Nile take their rise, is wholly new, nothing similar to it being found in any earlier writer.[6] He adds, indeed, immediately after, as if to exclude the possibility of its being confounded with either of the two lakes in question, the name of Lake Coloë, from which (he tells us) flows the river Astapus, and which he places on the equator, in 68° of longitude.[7] The Lake Coloë was in all probability the same as that mentioned by Strabo under the name of Psebo,[8] and may safely be identified with the lake Tzana in the highlands of Abyssinia, from which the Bahr el Azrek or Blue Nile

[4] iv. 7, §§ 23, 24.

[5] At the same time if we compare his account with that of Eratosthenes, it is evident that there is a complete confusion of *names* between the two. Eratosthenes gives the name of Astapus to the main stream of the Nile above its junction with the Astaboras, though he adds that others gave it the name of Astasobas; the Astapus of Ptolemy on the other hand was a tributary of the Nile, the main course of which above their junction flowed from the south; but unfortunately he has given us no distinctive appellation for this upper part of the river, which he assumes to be the true Nile, but of course was not known *by that name* in the countries which it traversed. The names given by Pliny from Juba (*H. N.* v. 10, § 53) are equally confused.

[6] Eratosthenes indeed (as we have seen) had heard a vague report that the main stream of the Nile took its rise in certain lakes to the south. But it is very unlikely that any account of the equatorial lakes should have reached him. It is much more probable that this referred only to the great marshes, often spreading into wide lagoons, from which the White Nile might well be supposed to derive its waters. With these might be associated some vague notion of the Astapus or Blue Nile having its source in a lake.

[7] iv. 8, § 24.

[8] Strabo, xvii. 1, § 3.

really derives its waters. We thus find Ptolemy's account of the Astapus perfectly correct, with the exception of its supposed junction with the Astaboras, and it is clear that he, like Eratosthenes before him, regarded the Bahr el Abiad or White Nile, as the true Nile. This was indeed the natural conclusion, independent of the volume of the two streams, from the circumstance of the White River maintaining its course from the south, in accordance with the general direction of the Nile throughout Ethiopia and Egypt.

§ 26. The important fact that the Lake Coloë was the source of the Astapus may well have been derived by way of Adulis from traders from Auxuma or Axum, which, as we learn from the Periplus, had already become an important centre of trade before the time of Ptolemy:[9] but it is probable that his information concerning the other two lakes, in which the Nile took its rise, was derived from quite another quarter. The extensive trade carried on by the Greeks at this period with the eastern coast of Africa, especially with Rhapta, opposite to Zanzibar, would naturally open out to them new sources of information with regard to the interior of the continent, and there is nothing to surprise us in the fact that they should in this manner have obtained hearsay accounts of the existence of two great lakes in the interior, which were supposed to supply the head waters of the Nile. Such accounts would naturally be, like all similar reports of native traders, very vague and indistinct, and in order to reduce them into a scientific form, and assign to the lakes in question a definite position on his map, Ptolemy had to proceed in his usual arbitrary manner, and has done so without the slightest indication of the imperfect nature of his materials. His latitudes and longitudes are clearly worthless, except in so far as the former represent the broad fact that these lakes, and therefore

[9] Ptolemy himself calls Auxuma the capital or royal residence (Αὐξώμη ἐν ᾗ βασίλειον. § 25). He has also a *city* of Coloë, which, however, he places at a considerable distance from the lake of that name.

the sources of the Nile, were actually situated south of the equator, not far from the parallel of Rhapta: and the mode of connection of the two, by separate arms of the river flowing from each, and uniting lower down, is so obvious an inference, that we cannot wonder at its being adopted as a matter of course, whether by Ptolemy himself, or the informants of Marinus. But because in this, as in so many other cases, the form given by Ptolemy to his materials was erroneous, we need not on that account reject the valuable information on which they were based: and there seems no reason to doubt that authentic intelligence of the great lakes in the equatorial regions of Africa, from which the Nile really derives its waters, had reached the ears of the Greek traders at Rhapta, and had passed through them to the knowledge of the Alexandrian geographer.

It was undoubtedly from this source only that such information could be derived: just as in modern times it was by overland journeys from Zanzibar that the great lakes have been *rediscovered*. The obstacles to the ascent of the White Nile continuously from Meroë to its source were such as could only be surmounted by enterprising travellers, and there can be little doubt that this ascent had never really been made, but that Ptolemy followed the tradition of native informants in connecting the lakes in question with the Nile. The exact nature of this connexion was still a subject of doubt in very recent times: we cannot therefore wonder that Ptolemy solved the difficulty at once in the manner that seemed to him most in accordance with geographical probability, and then, according to his usual custom, laid down the arbitrary conclusion thus formed, as if it had been based on definite information. With the knowledge we now possess of the true sources and affluents of the Nile, we have certainly cause to wonder at the extent of that attained by Ptolemy, rather than to censure it because it is not more accurate or complete.

§ 27. But in addition to the information thus furnished us by Ptolemy, with regard to the sources of the Nile, he has

given us in another passage some further statements, founded apparently on wholly different authorities, and which are clearly of a much less valuable character, though they have attracted much attention, and given rise to much controversy. After repeating his statement already noticed, that from the promontory of Rhaptum there extended a vast gulf, as far as that of Prasum,—from which (as we have seen) he supposed the coast of Africa to be prolonged eastwards towards the south-eastern lands of Asia—he continues: "Around this gulf dwell Ethiopians who are cannibals (Anthropophagi), to the west of whom extends the range of Mountains of the Moon, the snows from which are received by the lakes of the Nile:"[1] and he proceeds to fix the limits of the range thus designated, which he conceived as situated in twelve degrees *and a half* (!) of south latitude, and extending from east to west through 11 degrees of longitude (from 57° to 68°). The precision with which he determines the position and limits of a range of mountains, concerning which he had no real knowledge, and which had no existence in fact, finds a parallel in that of the Hyperborean Mountains in European Sarmatia: and there seems no doubt that the process by which Ptolemy arrived at his conclusion was much the same in both cases. In this instance he had learnt the existence of two lakes, which he believed to be the sources of the Nile: he had learnt also the existence of a range of mountains, *some of which were so lofty as to be covered with snow*, though situated under the equator: he then at once assumed that the lakes were fed by the snows of the mountains, and having no real idea of the position of these last, drew them on his map in a straight line, to the south of the lakes, extending far enough to the east and west to supply, as he conceived, the necessary drainage.

It is only in very recent times that we have learnt the

[1] After describing the gulf in question and assigning the latitude and longitude of Cape Prasum, he adds: *τοῦτον μὲν οὖν τὸν κόλπον περιοικοῦσιν Αἰθίοπες ἀνθρωποφάγοι, ὧν ἀπὸ δυσμῶν διήκει τὸ τῆς Σελήνης ὄρος, ἀφ' οὗ ὑποδέχονται τὰς χιόνας αἱ τοῦ Νείλου λίμναι.* iv. 8, § 2.

curious fact that there really do exist, in the neighbourhood of the upper waters of the Nile, two mountains of sufficient altitude to be covered with snow through the greater part, if not the whole of the year:[2] and though these mountains (Kilimanjaro and Kenia) are in fact situated to the east of the basin of the Nile, instead of to the south of it, it is highly probable that a fact so unique in the geography of tropical Africa became the foundation of the statement transmitted to us by Ptolemy. The name of Mountains of the Moon,[3] which is given to us by Ptolemy in Greek, was probably the translation of some native appellation. But it was adopted by the Arabian geographers, and became mixed up in their hands with many fables and absurd exaggerations: while among modern geographers it has retained a place upon the map of Africa down to our own time, though continually shifted about to suit the progress of recent discoveries.[4] In reality it appears clear that no such range as that supposed by Ptolemy ever existed: and that it was as much a geographical creation of his own as "the Great Gulf" which connected Africa with India; but that it was based upon information which really

[2] It is not surprising that this fact—now established beyond the possibility of doubt—should have been received at first with some incredulity. Mr. Cooley especially—to whose theories it was strongly opposed—treated with the utmost contempt "the supposed snows" of Kilimanjaro.

[3] The name is given by him in the singular (τὸ τῆς Σελήνης ὄρος), but this is his habit in all but a very few cases. That the range, as he conceived it, was of great extent, is proved by the longitudes assigned to the two extremities, which give it a length of about 550 G. miles.

The attempt of Mr. Cooley (*Claudius Ptolemy and the Nile*, 8vo. 1854) to discard altogether the Mountains of the Moon, as an interpolation in the text of Ptolemy, due to the Arabian geographers, appears to me wholly untenable. The passage in which he speaks of them (iv. 9, § 3) is unconnected with that concerning the two lakes (iv. 8, § 23), and probably derived from a different authority; but it is not inconsistent with it; nor is there any reason for rejecting it, which would not apply to many other statements in his work, which we now know to be irreconcilable with geographical facts.

[4] Even so late as 1832, in the map that accompanies Col. Leake's Dissertation on the Niger (in the *Journal of the Geographical Society*, vol. ii.), the Mountains of the Moon are represented as stretching across Africa from the highlands of Abyssinia to the mouth of the Quorra, in about 6° or 7° of *north* latitude; thus cutting straight across the course of the White Nile, as we now know it to exist. The same thing is still found on Arrowsmith's Map of Africa, published in 1834.

referred to a different range of mountains, in respect to which it was authentic and correct.

§ 28. But if great interest and importance has been attached in modern times to Ptolemy's statements concerning the sources of the Nile and the Mountains of the Moon, still more controversy has been raised by the account he has given of two rivers in the interior of Africa, the Ger or Gir, and the Niger or Nigir. We have already seen that under the Roman Empire, even before the time of Pliny, Roman generals and governors were carrying their arms across the Atlas into Gætulia, and from Leptis inland to Cydamus and Garama: and though we have no detailed history of the Roman Empire after the time of Tacitus, we learn from the incidental notices in Ptolemy of the expeditions of Septimius Flaccus and Julius Maternus, that in some instances at least they had carried their exploring expeditions much farther into the interior. We cannot therefore be surprised to find that Ptolemy possessed, or supposed himself to possess, much fuller information concerning the interior of Africa than any preceding writer. But it is a matter of great difficulty to estimate the real value and character of the materials thus furnished him, and consequently to determine the true geographical significance of the statements which he has transmitted to us.

In his description of the interior of Africa, lying south of Mauretania, Numidia and the province of Africa,[5] it is remarkable that he enumerates many mountains, or chains of mountains, designated for the most part by the rivers which flow from them; but to which in each case, according to his custom, he assigns a definite position in latitude and longitude. Several of these are clearly only special appellations of subordinate groups or outliers of the great Atlas range; others appear to be really detached mountain ranges, such as we now know to occur in many places in the north of the Sahara. After this he continues: "The largest rivers in

[5] iv. 6, §§ 8–12.

the interior are: the Gir,[6] which connects together the mountain of Usargala and the ravine (pharanx) of the Garamantes: the river diverging from which occupies a position in 42° of longitude and 16° of latitude, which forms the Chelidonian Lakes, the middle of which is situated in 48° of longitude and 20° of latitude: which also after an interval, and, as it is said, having been carried underground, gives rise to another river, the western limit of which is in 46° long. and 16° lat., and the eastern portion of it forms the lake Nuba in 50° of longitude and 15° of latitude. Then the Nigir, which also connects together the mountain of Mandrus and that of Thala; this also forms the lake Nigritis which is situated in 15° of longitude and 18° of latitude: and towards the north it forms two branches, one to the mountain of Sagapola, the other to that of Usargala: towards the east it has only one arm which forms the Libyan Lake, situated in 35° of longitude, and 16½° of latitude. Towards the south it has one arm extending to the river Daradus in two points situated in 21° of longitude and 17° and 13½° of latitude."[7]

The above literal translation will serve to show the difficulty of understanding clearly what Ptolemy himself meant, so as to lay it down on a map, and it may be safely asserted that, if laid down on a map—according to the best idea we can form of the intention of the author—it will not be found to correspond to anything in the Geography of Africa, or indeed to any possible geographical system. One great source of this difficulty undoubtedly arises from his ambiguous use of the word *ἐκτροπή*, as an arm or branch of a river, which he

[6] The name is written by Ptolemy Γείρ, which is almost absolutely identical with the form Ghir, now applied to the river on the reverse of the Atlas, which is almost certainly the same called by Pliny Ger. The name of the Nigir (Νίγειρ) is not found in Pliny in the nominative case. Solinus calls it Nigris (c. 38, § 6). The form Niger, which has been generally adopted in modern times, seems to have arisen by analogy with Ger. It has clearly nothing to do with the Latin *niger* (black), though there can be no doubt that this false etymology contributed to the belief in its identity with the Nile of the Negroes; as if "the river of black men" must itself be black!

[7] iv. 6, §§ 13, 14.

employs indifferently, both here and elsewhere, for an affluent or tributary, and a divergent in the stricter sense, as an arm of a delta.[8] The expression applied both to the Gir and the Nigir, of their "connecting" two distant points[9]—in both instances chains of mountains, not lakes,—is not found similarly used elsewhere, and can only be understood with reference to such rivers as those in the north of Africa, which have no real outflow, and either end in stagnant lakes, or are gradually absorbed in the sands.

§ 29. Owing to the great obscurity of Ptolemy's own statements on the subject, as well as the general ignorance which prevailed, until very recently, in respect to the real geography of the countries in question, the most widely divergent interpretations have been put upon the passage just cited. The undue amount of deference paid to the authority of his supposed astronomical observations doubtless contributed largely to this result, and when the Arabian geographers became aware of the existence of a great river in Soudan, in nearly the same latitude as that assigned by Ptolemy to his so-called Nigir, it was natural to identify the two.[1] The river of Timbuctoo came to be known as the Nile of the Negroes, and there can be no doubt that the false etymology, which connected the Niger or Nigir of Pliny and Ptolemy with the Nigritæ and Negroes, contributed mainly to the establishment of this notion. In modern times geographers have been divided into two sects on the subject: the one, of which D'Anville was the leader, and Colonel Leake has been the ablest expounder in our own

[8] Thus he applies it to the point of divergence where the two arms of the Nile separate to form the Delta (iv. 5, § 42), and on the other hand to the confluence of the great tributaries of the Danube (the Inn, the Save, the Theiss, &c., with the main stream (ii. 12, 14, 15, &c.).

[9] ἐπιζευγνύει joins together, as a bridge connects the two banks of a river. The expression is very commonly used by Ptolemy of a *linè* connecting two points on a map; but there is, I believe, no other instance of its employment in respect to a *river*. Of course a river cannot really *connect* two mountain ranges, as it may two lakes, or even (in exceptional cases) two other rivers; and Ptolemy can hardly have meant more than that the river, or its arms, extended from one to the other; but even this is of little use to us.

[1] See on this point M. Vivien de St. Martin, pp. 445–447.

days, maintaining that the Nigir of Ptolemy was really the great river known to the natives as the Joliba in the upper part of its course, and lower down as the Quorra, but to which the name of Niger has been inseparably attached by modern geographers.[2] Others contend that Ptolemy had no knowledge of the fertile regions of Soudan beyond the Great Desert, and consequently could never have heard of the great rivers of the interior; and that all his statements refer in fact to the tract south of the Atlas, bordering on the Great Sahara, and to the comparatively unimportant streams by which it is traversed. According to this view the latitudes and longitudes given by Ptolemy in this part of his work are as defective and illusory as we have seen to be the case in many other instances, and their apparent agreement with certain actual geographical features is merely accidental.

§ 30. The last of these views has been advocated recently with much ability by M. Vivien de St. Martin,[3] and it must be admitted that it has much in its favour. It is certain that Ptolemy connects his two rivers, the Gir and the Nigir, with certain chains of mountains, and these again he connects with Mauretania and Numidia in a manner that leaves no doubt that they were parts of the great chain or system of mountains in the North of Africa, to which modern geographers give the general appellation of Atlas, a term unknown to Ptolemy in this signification. Thus, as we have seen, he describes the Gir as flowing from the mountain which he calls Usargala. But he elsewhere tells us that the same mountain range contained the sources also of the Bagradas, a well-known river, which flowed into the Mediterranean, not far from Carthage.

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[2] See the elaborate paper by Col. Leake in the 2nd vol. of the *Journal of Geogr. Soc.* (1832), entitled "*Is the Quorra the same river as the Nigir of the Ancients?*" His views have been adopted, and a summary of his arguments repeated by Mr. E. B. James in Dr. Smith's *Dict. of Ancient Geography*, art. NIGEIR.

[3] *Le Nord de l'Afrique dans l'Antiquité*, pp. 425–461. The same view had been previously maintained by M. Walckenaer (*Recherches Géographiques sur l'Intérieur de l'Afrique Septentrionale*, 8vo. Paris, 1821, pp. 346–392).

These he places in 20½° of latitude, far to the south of their true position, so that he assigns to the Bagradas a course of not less than 12° of latitude: but he distinctly tells us that it was the same river that traversed the province of Africa and had its mouth near Carthage.[4] Again, he describes the Melano-Gætuli, a tribe whose name distinctly connects them with the south side of the Atlas, as extending from Mount Usargala to Mount Sagapola: and the position of the latter mountain is given by its being the source of the river Subus, which flowed into the Atlantic just beyond the limit of the Roman province, and may be safely identified with the river Sus. This he places in lat. 25°, more than 5° south of its true position. Next to this he mentions a mountain called Mandrus, which he describes as containing the sources of all the rivers flowing into the Atlantic, from the river Salathus in lat. 22° to the river Massa in lat. 16½°. In accordance with this he places the centre of Mount Mandrus in lat. 18°. It is this range of Mount Mandrus, which he evidently conceived as a range running from N. to S. parallel to the Atlantic, but to which there is nothing corresponding in reality[5]—that Ptolemy describes as forming one extremity of the Nigir, while two other arms were connected with Mount Sagapola and Mount Usargala. These he apparently regarded as divergent arms

[4] This is overlooked by Col. Leake, who assumes that the Bagradas of the interior must be a distinct river from that which traversed the Roman province of Africa (*Journal of Geogr. Soc.* vol. ii. p. 21), and the same view is taken by the author of the article BAGRADAS in Dr. Smith's *Dictionary of Geography*. But the testimony of Ptolemy to the contrary is precise. After describing (iv. 6, § 10) the position of Mount Usargala, "from which flows the river Bagradas" (ἀφ' οὗ ῥεῖ ὁ Βαγράδας ποταμός), and which he places, as stated in the text, in lat. 20° 30'; he adds, οὗτος, φερόμενος διὰ τῆς Ἀφρικῆς, εἰσβάλλει εἰς τὴν θάλασσαν κατὰ θεσίν λδ λβ γο, the very same latitude and longitude that he has elsewhere assigned to the mouth of the Bagradas near Carthage (iv. 3, § 6).

The sources of the southernmost arm of the Bagradas are really situated between 35° and 36° of N. latitude; so that they are placed by Ptolemy about 16° too far south! This enormous error, coupled with that in the position of Garama or Fezzan farther east, was quite sufficient to throw his whole geography of Northern Africa into hopeless confusion.

[5] It may perhaps arise from a misconceived or exaggerated idea of the subordinate range south of the Great Atlas and parallel to it, which separates the valley of the Sus (Subus) from that of the Draa (Daradus).

flowing *to* those mountain chains: they were probably in reality affluents or tributaries proceeding *from* them. But in any case it is clear that he supposed the river Niger and its arms to be connected with the mountains to the south of Mauretania, in a manner that excludes the possibility of their being divided from them by the vast desert of Sahara.[6]

It is much more difficult to fix, even approximately, the other extremities which he assigns to his two rivers, the Gir and the Nigir: Mount Thala and the Ravine of the Garamantes. The latter is supposed by M. de St. Martin to be the deep and narrow valley of Ghât, west of Fezzan, the proximity of which to the country of the Garamantes would account for its name; Mount Thala we have no means of identifying; it is placed indeed by Ptolemy as far south as lat. 10°, but no value can be attached to this determination.

§ 31. There can be no doubt that one cause which contributed in a great degree to prevent the recognition of the Gir and Nigir of Ptolemy as rivers of Northern Africa, was the absence of any really great rivers on the southern side of the Atlas. Until very recently indeed there prevailed a very exaggerated notion of the desert character of the country immediately to the south of the great mountain range, and the northern part of the Sahara was supposed to present a character of unbroken desert to an extent greatly exceeding the truth. We have lately learnt that the whole country, for a distance of more than ten degrees south of the Atlas, is of a very varied character, presenting numerous ranges of mountains, with Wadies, or valleys containing watercourses at certain seasons of the year, though dry in summer, and fertile spots or oases, interspersed among barren table-lands and broad patches of sandy desert.[7] Another prominent feature

[6] The same view is strongly confirmed by the statement that the Nigir throws out one arm to the south, which joins the river Daradus (§ 14). Now the Daradus may probably be identified with the river Draa or Drha, and this again connects it with the west coast, and the region immediately south of the Great Atlas.

[7] See the valuable sketch of the physical geography and geology of the (northern) Sahara, given by Mr. Tris-

of these regions is the occurrence of numerous shallow lakes, or "Sibkhahs," as they are called, analogous to those which have long been known to exist within the limits of Algeria and Tunis, and which correspond exactly with such lakes as the rivers described by Ptolemy may be supposed to form. One of the greatest peculiarities of the same districts is the frequent recurrence of the phenomenon, alluded to by all ancient writers in respect to the countries in question—of the disappearance and reappearance of rivers after a subterranean course of more or less extent.[8] This, as we have seen, is stated by Ptolemy of the Gir, while it plays a prominent part in the confused and palpably fabulous account given by Juba of the connexion of the Nile with the rivers of Mauretania.[9] On the whole it is certain that if we are content to discard the impression that the Gir and Nigir were really great rivers of the same character as the Nile or the Quorra, the peculiar physical characters of the country north of the Great Desert are precisely such as might be supposed likely to give rise to the confused and unintelligible account given by Ptolemy of the river-systems of Northern Africa.[1]

§ 32. But unquestionably the main cause which has led modern writers to identify the Nigir of Ptolemy with the Nile of the Negroes—the great river of Soudan, whose sources and outflow were so long unknown—arose from the erroneous positions in latitude and longitude which he had himself assigned to the two rivers. The Gir and the Nigir are placed

tram in the Appendix to his work, entitled *Great Sahara* (8vo. 1860), and concerning the Sahara generally Keith Johnston's *Africa*, pp. 72–82.

[8] These rivers, as pointed out by Mr. Tristram (*The Great Sahara*, p. 363), do not flow through real subterranean channels, like those in cavernous limestone districts; but merely sink into the sand, through which they continue to percolate, until thrown up to the surface by the occurrence of some stratum of hard rock.

[9] See Chapter XX. p. 174.

[1] It is always dangerous to have recourse to the supposition of physical changes, in order to account for the statements of ancient writers; but it must be admitted that there are many arguments in favour of the climate south of the Atlas having been in ancient times less arid than at present, and a small increase of the rainfall in those regions would convert many of the Wadies that are now merely dry watercourses into rivers for a part of the year.

by him within a tract extending from about 15° or 16° to 18° N. latitude, the whole of which would in reality fall within the limits of the great desert of the Sahara, but only a few degrees north of the tract really occupied by the fertile provinces of Soudan, and traversed by the Joliba or Quorra, as well as by several other important rivers. It thus becomes so plausible to identify Ptolemy's rivers with the great streams in question that one cannot wonder that this conclusion has been adopted by many geographers of eminence. Colonel Leake in particular has been influenced principally by this reason in his elaborate argument to prove Ptolemy's Nigir to be really the same with the Quorra.[2] Yet it is difficult to see how Ptolemy could have attained any such accurate knowledge of the regions in question; while it is remarkable that in all other instances his positions for the interior of Africa differ widely from the truth. We have already seen how extravagantly far to the south he carried the position of Agisymba which certainly represented to his mind the country immediately to the south of the great desert, or in other words the northern portion of Soudan. Yet this country is really situated in about 14° or 15° of north latitude, while he carried it, as we have seen, to eight degrees *south* of the equator. Even in regard to a comparatively well-known point like Garama (the capital of the Garamantes) we find him placing it in lat. 21° 30′; fully 5 degrees south of its true position, and only 3½ degrees north of his city of Gira, which he calls the metropolis of the surrounding region, and places to the south of the river Gir. It is impossible therefore to suppose that he conceived them to be separated by the wide expanse

[2] It is only by a careful and continuous examination of the data furnished by Ptolemy in regard to the interior of Africa that one comes to be convinced of the magnitude of his errors, and of the utterly untrustworthy character of his materials. From the total want of observations to correct them, one error was necessarily built upon another, till the accumulated result became one of startling extent. Colonel Leake appears to me to have been misled throughout his paper by a disposition to pay exaggerated deference to the authority of Ptolemy, overlooking the fact that his statements, *as they stand*, are impossible and absurd; and it is only by much modification and alteration that they can be made to suit with either one theory or the other.

of the great desert, as they must have been on the supposition that his river Gir was really one of the great rivers of Soudan. Yet it seems still more impossible to assume that the error lay wholly in the position assigned to Garama, a place which had been repeatedly visited by Roman generals, and to which we know that he possessed itineraries, while that of Gira—a place utterly unknown from any other source—was determined with comparative correctness. It seems much more simple to conclude that his map of the interior of Africa was throughout vitiated by the same error, which caused him to carry his positions in all instances much too far to the south; and that he thus unintentionally brought his two rivers—the Nigir especially—into latitudes nearly corresponding with those of the great rivers of Soudan, of which he had no real knowledge.

§ 33. We have unfortunately no information as to the sources from whence he derived his knowledge (such as it was) of the countries in the interior of Africa, but it may safely be assumed that it could at best only be collected from the hearsay reports of native traders. But the tendency of itineraries derived from such quarters is almost always to exaggerate the distances; and we have already seen, in our examination of Ptolemy's geography, many instances of the results of this tendency. Had he really possessed any such line of route across the desert to the banks of the Joliba, it can hardly be doubted that he would have placed that river and his supposed city of Nigira far too much to the south, instead of bringing them up to a level with Gira, within a few degrees of Garama or Fezzan. But moreover it seems utterly impossible to suppose that, had he possessed any such records, he would have ignored the main fact of the vast extent of desert that separated the great river from the comparatively fertile districts to the south of the Atlas; a desert that so long proved an insuperable barrier to all European travellers. It is a point that has been too much lost sight of in the discussion of this question, that Ptolemy gives no indication of the existence of the Sahara

between the land of the Gætulians, and his rivers Gir and Nigir. It is certain that there is nothing to show that he had any knowledge of the occurrence of such a vast tract of desert to the south of Gætulia; and the omission is rendered the more significant by his distinct mention of "the Libyan desert" as bounding Africa (*i. e.* the Roman province of that name) and the Cyrenaica on the south, while he describes Gætulia as the country to the south of the two Mauretanias, without any notice of its being bounded in its turn by a similar desert.[3]

§ 34. But if we find ourselves compelled to reject the theory that would transport the rivers of Ptolemy to the south of the great desert, it must be admitted that there is the greatest difficulty in identifying them with any of the streams to be found south of the Atlas. We have seen that Suetonius Paulinus in his expedition across those mountains came to a river called Ger, and there is every reason to identify this with the stream still known as the Ghir, or Wady Ghir, which rises in the range of the Atlas, in about lat. 32° and descends to the Oasis of Twat.[4] But it is impossible to accept the obvious conclusion that the Ger mentioned on this occasion by Pliny was the same with the Gir of Ptolemy. Of the two rivers mentioned by that author, the Gir was the farthest to the *east*, while the Niger lay to the west, and had its sources in a mountain range not far from the Atlantic. Little or no value can be indeed attached to the name; and it is probable that the two forms Gir and Nigir are really only slight variations of the same. But even if we assume, as M. Vivien de St. Martin has done, that Ptolemy has interchanged the two, and that his Nigir is really the same with the Ger of Pliny, it cannot be contended that the Wady Ghir corresponds in even a plausible manner with the course assigned to the Nigir by

[3] Thus he repeatedly speaks of ἡ ἔρημος Λιβύη in connection with the former province (iv. 3, §§ 15, 26); but in iv. 6, § 15, *after* discussing the course of the Gir and the Nigir he says: ὑπόκειται δὲ ταῖς μὲν Μαυριτανίαις ἡ Γαιτουλιά, τῇ δὲ Ἀφρικῇ καὶ τῇ Κυρηναικῇ ἡ ἔρημος Λιβύη.

[4] The course of this river has for the first time been explored in very recent times by M. Rohlf.

Ptolemy. And the same thing is still more the case with the Gir of that author, for which we cannot find any suitable representative in the northern regions of Africa.[5] The only considerable stream really found south of the Atlas, with the exception of the Ghir already mentioned, is the Wady Djedi; and this is so little distance from the Roman province that it seems impossible to suppose it to have been the river intended by Ptolemy.[6] But the whole tract of the table lands between the Atlas and the Desert is intersected by Wadies or water-courses, some of which may well have been better supplied with water in ancient times, while they would also have formed under those circumstances more considerable lakes or lagoons than they do at present. The peculiar drainage system of this part of Africa, such as we now know it, undoubtedly presents strong features of resemblance with the general character of that represented by Ptolemy, while its intricate nature would render it probable that any hearsay accounts of it, reported by merchants and traders, would assume such a confused and unintelligible form as would render it impossible to identify its details with the real features of the country.

§ 35. Closely connected with the questions concerning the true position of the Nigir of Ptolemy, are those relating to his knowledge of the west coast of Africa. Here also two entirely different views have been taken by modern geographers of the extent of his knowledge, and the consequent value of the positions which he has assigned to the points that he mentions by name. As far as the limit of the Roman province of Mauretania Tingitana, the coast was naturally well known; and the headland which he describes as its southernmost point, and to which he gives the name of the Greater Atlas

[5] Of course on the theory that identifies the Nigir with the Quorra, it is easy to find a representative for the Gir in any of the large rivers farther east—the Yeou, Shary, &c. None of these, however, in any respect answer to the description given by Ptolemy of the Gir and its arms.

[6] For a description of the course and character of the Wady Djedi, see Mr. Tristram's *Great Sahara*, p. 362.

may safely be identified with Cape Ghir, a prominent headland formed by the main chain of the Atlas, abutting directly upon the ocean. Immediately south of this he places the river Subûs, the name of which may clearly be recognised in the valley and river of Sûs or Sous, in precisely the same position with respect to Cape Ghir. But though this remarkable feature in the geography of Western Africa may be considered as established beyond a doubt, we find it brought down by Ptolemy to lat. 26° 30′—more than 4° south of its true position—while in longitude he places it to the east of Cotes (Cape Spartel), instead of nearly 4° to the west of it.[7] Throughout this part of his geography indeed he commits the error of supposing the coast of Africa to hold a course nearly due N. and S. from Cape Spartel (but trending continually a little to the east) instead of nearly south-west, and he has assigned his longitudes accordingly.

But it is beyond this that the chief discrepancies begin. Following the coast to the south Ptolemy enumerates several rivers and promontories, as well as three "cities," till he comes to a river which he calls Daradus, or Daras, the name of which would naturally lead one to identify it with the Draa or Drah, one of the most considerable rivers in this part of Africa. Unfortunately Ptolemy places its mouth in 15° N. lat., while the Draa really has its outlet in about 28°, or less than 3° south of Cape Ghir.[8] The latitude thus assigned is actually more than a degree to the south of the mouth of the Senegal, the first great river of Central Africa; and consequently Colonel Leake, and those writers who cling to the correctness of Ptolemy's astronomical positions, identify the Daradus of our author with the Senegal. Beyond this he mentions a promontory called Arsinarium, with another called Russadium: and beyond this comes the Western Gulf, or as he elsewhere calls it, the Great Gulf on the Western Ocean. Those writers who consider the

[7] Ptol. iv. 1, § 4.

[8] iv. 6, § 6. He elsewhere (§ 9) tells us that it takes its rise in a mountain called Caphas, and places its sources in 10° N. lat. and 27° E. long., or 17 degrees of longitude east of its mouth.

Daradus to be the Senegal, naturally identify the Promontory of Arsinarium with Cape Verde, and the river Stachir, which is placed only about a degree farther south, with the Gambia.[9]

§ 36. The combination is no doubt a tempting one; and if it stood alone, might be considered as satisfactory. But the difficulty arises that between the river Draa and the Senegal occurs the long stretch of coast—extending for more than 900 geographical miles—where the great desert abuts upon the sea, and throughout the whole extent of which not a single river discharges its waters into the ocean. If therefore we identify the Daradus with the Senegal, we are not only unable to identify any of the intermediate points, but the description of this part of the coast is so utterly at variance with the reality as to render any such identification impossible. But there is another point that has an important bearing upon this question. Ptolemy places his promontory of Arsinarium—which Colonel Leake would identify with Cape Verde—in latitude 12°, directly opposite to the nearest of the Fortunate Islands, by which he unquestionably meant to designate the Canaries, though he erroneously places them 7° from the mainland. The latitude thus assigned to the Fortunate Islands is of course entirely erroneous;[1] but this is easily accounted for, in a case where he could not possibly have any real observations. But the point on the mainland to which they were most

[9] Ptol. iv. 6, §§ 6, 7. Leake in *Journ. of Geogr. Soc.* vol. ii. p. 18.

[1] It is a singular accident—for I believe it to be nothing else—that the position thus assigned to the Fortunate Islands comes to coincide more nearly with the latitude of the Cape de Verde Islands, than with that of the Canaries; and hence if his promontory of Arsinarium be identified with the Cape de Verde, it might be plausibly suggested that he had confounded the two groups of islands, and that they were *both* included under his appellation of the Fortunate Islands (*αἱ Μακάρων νῆσοι*), to which he assigns an extension of nearly six degrees of latitude. But the Cape de Verde Islands, being situated more than 300 miles from the coast of Africa, were little likely to have been discovered by ancient navigators; and, strangely as their position is misplaced on his map, there can be no reasonable doubt that the Fortunate Islands of Ptolemy were the same with the group described under that name by Juba and Pliny, which, as we have seen, were undoubtedly those now known as the Canaries. (See Chapter XX. p. 175, Note E.)

nearly opposite, is just one of the facts which even an unscientific navigator would easily observe and record: and we may therefore feel assured that Cape Arsinarium was really the headland immediately opposite to the nearest of the islands. This leads us to identify it with Cape Juby, which is only about sixty miles from Fuerteventura, the nearest of the Canaries. In this case the next headland Russadium would be represented by Cape Bojador, which figures so conspicuously in the early voyages of the Portuguese along this coast.

It is true that on this supposition the distance between Cape Arsinarium and the mouth of the Daradus (the Draa) is greatly overrated, Ptolemy placing the latter river in lat. 15°, 3° farther north, while the real *distance* is not more than 80 G. miles, and the interval of latitude only about 20′, the coast in this part bearing nearly east and west: and again, the interval between the Daradus and the Subus, estimated by Ptolemy at not less than *ten degrees*, is still more exaggerated, the real distance being little more than 180 G. miles, or 3° of latitude, if we suppose the coast (as Ptolemy did) to run nearly from north to south. We are thus left with a choice of difficulties: there being really no alternative but to adopt Ptolemy's latitudes, as Colonel Leake has done, and transfer the Daradus to the Senegal, or to identify it with the Draa, 12° more to the north. Unaccountable as such an error may appear, it must be observed that Ptolemy has already placed Cape Ghir 4° too far to the south, and that a similar tendency to exaggerate his distances in latitude has been observed throughout his map of Africa.[2] But those of the Senegal and Cape Verde would, according to Colonel Leake's view, be comparatively correct: and we should thus have the strange result that along the west coast of Africa, where we have no account of the Greeks carrying on any trade, their statements of distances—from which alone Ptolemy could calculate his

[2] This is admitted even by Colonel Leake himself (p. 18).

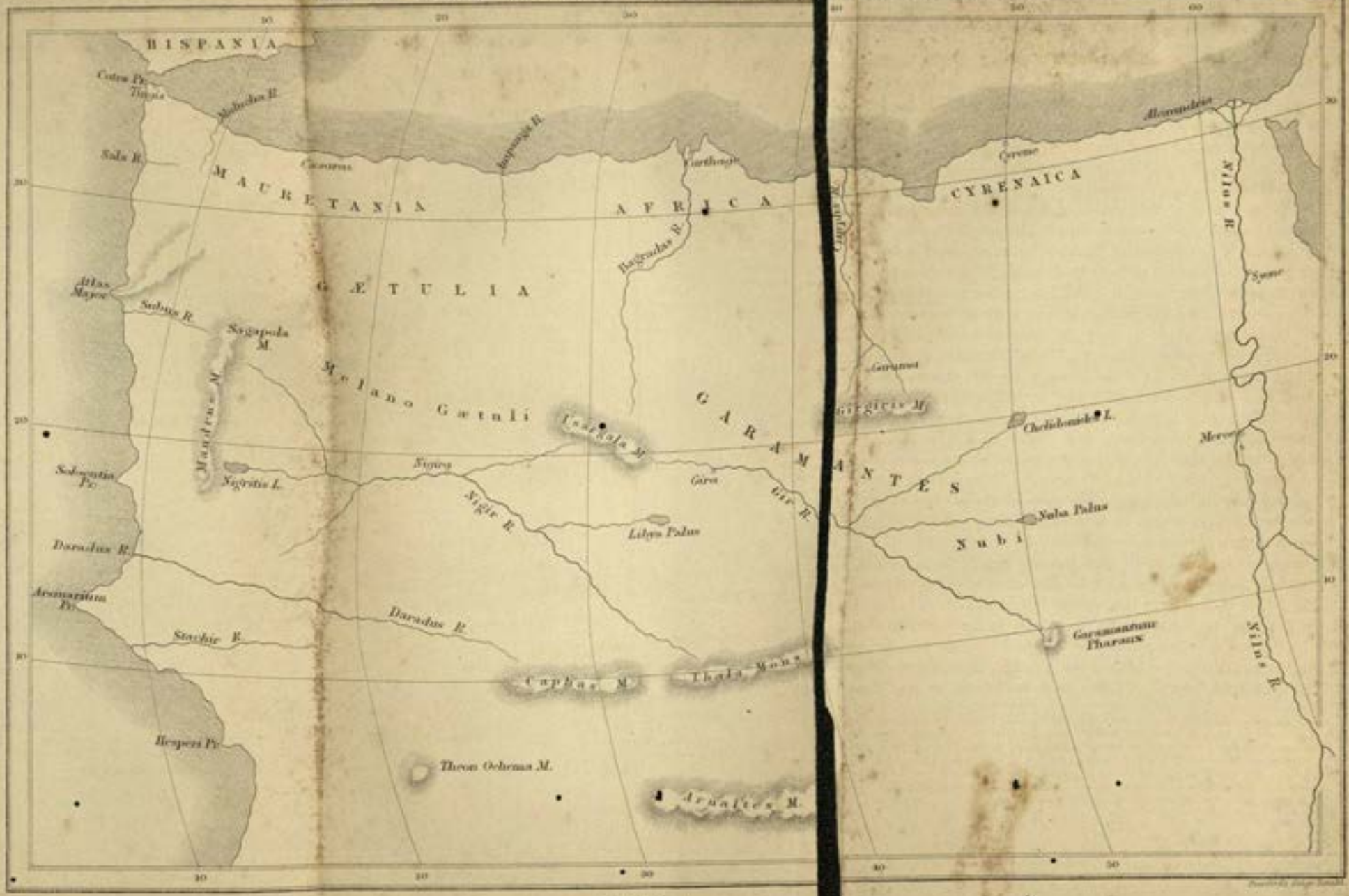
latitudes,—became the more correct the farther they receded from home. Indeed, it is difficult to cast a glance at Ptolemy's map of North-Western Africa, and the utter dissimilarity of its configuration with the real form of the continent, and retain a belief in the possibility of his having accurate information, from which to determine correctly a position so remote as that of the mouth of the Senegal.

§ 37. One effect of this misconception of the extension of the west coast of Africa, was to distort altogether his idea of the position of the Fortunate Islands: by which name it cannot be doubted that he as well as Juba and Pliny meant to designate the Canary Islands. But having learnt apparently from good authority the position of one of these opposite to the headland to which he gave the name of Arsinarium, he was compelled to carry it down to 11° of N. latitude, while he placed the northernmost of the group in lat. 16°, thus ranging them in a widely scattered group, extending through more than 5° degrees of latitude, instead of lying, as they really do, nearly together, in a continuous cluster, having a general direction from east to west, and comprised within about two degrees of latitude.[3] The point is one of importance as showing how utterly vague were his ideas of the position of the islands, through which he drew his primary meridian from which all others were to be reckoned.

Another instance, and a very striking one, of the manner in which Ptolemy assigned positions at random to places concerning which he had only the vaguest information, is to be found in the case of Cerne, which he places in his tables in lat. 25° 40′, and 5° of longitude east of the Fortunate Islands: so that it must have lain in the open Atlantic, three degrees from the mainland, instead of being, as it really was, an islet close

[3] He enumerates six islands, four on the outer line through which he draws his meridian—and two a degree nearer to the coast. One of these last he calls Canaria, the other the island of Juno, evidently the Junonia of Juba. But his other four names, Aprositus (the Inaccessible Island), Pluïtala, Caspiria, and Pinturia or Centuria, cannot be identified, unless Pluïtala be a corruption of the Latin name Pluvialia applied to one of the islands by Statius Sebosus (Plin. vi. 32, § 202).

MAP OF NORTH WESTERN AFRICA ACCORDING TO PTOLEMY



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to the shore. Had Ptolemy possessed, as suggested by Colonel Leake, Carthaginian authorities, and derived his materials from thence, he could not possibly have fallen into such a mistake with regard to a place which had been in their time an important *dépôt* of trade, though it had subsequently decayed, and its very existence, as we have seen, became disputed.

§ 38. The above examination of Ptolemy's geography of Africa will serve to show the utterly untrustworthy character of the specious system which he has presented to his readers. It is very probable that he (or rather Marinus) really possessed materials of considerable value, and that had he furnished us with the data from which he deduced his erroneous conclusions, we should have been able in our turn to have derived from them results of real interest. But we are unfortunately left wholly in the dark as to the nature and character of these materials: we have no reason to suppose that the Greeks ever carried on trade to any extent along the west coast of Africa, and still less that they had any direct intercourse with the negro nations of the interior. To assume under these circumstances that Ptolemy really possessed authentic and detailed itineraries, upon which he could found approximately correct estimates of the geographical position of the places he enumerates, is to place a degree of confidence in his astronomical determinations to which they are certainly not entitled.[4] The vague and fluctuating character of the names in the interior of the African continent is sufficiently apparent to any one who compares a series of modern maps; and the same must have been the case in ancient times also; while the various hypo-

[4] Dr. Beke's remarks on this subject appear to me perfectly just. "In attempting to fix in the map of Africa the true position of Ptolemy's lakes and sources of the Nile, we must discard all notions of their having been determined *absolutely* by means of astronomical observations, special maps of particular localities, or otherwise, and regard them simply as derived from oral information, and as laid down *relatively* to some well-known point on the coast" (*Sources of the Nile*, p. 69). If this is true of the eastern portions of Africa with regard to which he certainly had *some* trustworthy *data*, it applies with still greater force to the interior and the western half of the continent.

theses started by modern geographers, based upon the erroneous information that they possessed, may at once explain and excuse the errors committed by Ptolemy in attempting to put into shape the very defective materials at his command. When we see how much of the map of Africa was still either hypothetical or erroneous, even in the days of D'Anville and Rennell, we cannot wonder that the same map, as drawn for the first time by Ptolemy, was still more hypothetical and still more erroneous.

§ 39. Both in this instance and in regard to the eastern portions of Asia, we have seen that Ptolemy undoubtedly possessed information beyond that of any preceding geographer, but that this information was of a very vague and indefinite character, and he had no means of correcting it, or of testing the accuracy of the positions which he assumed in consequence. Under these circumstances the attempt to clothe his imperfect materials in a scientific garb, was only to mislead his readers by concealing the poverty of his real knowledge: and unfortunately it had that effect in a most unprecedented degree. Owing to the definite and positive form in which his results were presented, it was assumed without further inquiry that they were based upon sound and sufficient data. His great astronomical reputation also contributed to the same effect. It seemed but natural to suppose that an astronomer of such a high character could not have given such full and detailed tables of latitudes and longitudes unless they were really derived from trustworthy observations. Few read, or cared to remember, his first introductory book, in which he had pointed out very fairly the true character of his materials, and the imperfections necessarily resulting from thence in the execution of his work. The problem which he proposed to himself was a noble scientific conception, but it was one which it was in his day utterly impossible to realize. The scientific framework was in reality a delusion, but its outward form was so regular and symmetrical, that it imposed upon almost all observers; and the authority of Ptolemy became established

in geography in a position nearly as paramount as that which for many centuries it occupied in astronomy. Even at the present day there still remains a lingering desire to prove him in the right if possible, and to believe in the accuracy of geographical positions which could not possibly have been founded on actual observations.

§ 40. But whatever were the defects in Ptolemy's great work, considered only as what it professed to be—a collection of materials for laying down an improved map of the world; we must always bear in mind that the construction of such a map, though the first duty, or the first necessity, of the geographer, is very far from representing his whole duty. An accurate knowledge of the human skeleton is essential to the artist; but it is very far from an adequate representation of the human figure. The map-maker in like manner furnishes only the dry bones of geography, which it is the task of the physical geographer to clothe with flesh and blood in order to produce an organic whole. But of any conception of this truth Ptolemy appears to have been wholly destitute. It may be urged indeed that the plan of his work excluded any full development of this important branch of his subject. But he might certainly have easily introduced brief outlines of the principal rivers and ranges of mountains in each country; and the absence of all such notices renders it impossible to draw anything like a real map of the countries comprised in his tables. The few indications supplied by the occasional mention of the mouths, sources, and confluences of rivers are introduced in a careless and perfunctory manner, and are often strangely erroneous.[5] Of mountain chains on the other hand—the most important of all features in the real geography of a country—he in many instances either takes no notice at all,

[5] This has been already pointed out in respect to the rivers of Gaul, where he makes the Durance, the Isère, the Rhone, the Doubs and the Saone all rise in the same part of the Alps, within about a degree of one another. His attempt to describe the Po and its confluents, and their relation with the Italian lakes, is in like manner very confused and obscure, and would indeed, if taken alone be utterly unintelligible.

or merely refers to them, as in the case of the Pyrenees, because they formed the boundary between two nations. In regard to this important branch of the science of geography, his predecessor Strabo was as superior to Ptolemy as he was inferior to him in all that relates to the mathematical construction of his maps.

§ 41. It is impossible to quit the consideration of the merits and defects of Ptolemy as a geographer, without adverting to the singular circumstance that, in one instance, one of his gravest errors became the means of contributing materially, though indirectly, to the greatest discovery of modern times. We have seen that his erroneous system of graduation, combined with the exaggerated accounts he had received of the distance of the Seres and Sinæ towards the east, had led him to extend the continent of Asia in that direction far beyond the truth. The effect of this was to diminish to a corresponding extent the intermediate unknown space, and consequently lead to the idea that the ocean which separated the extreme east of Asia from the western lands of Europe was of much smaller dimensions than it would really have been had there been continuous sea between them. Hence when Columbus set out on his memorable voyage, with a view of arriving by sea at the Indies, he supposed the Land of Spices of which he was in search to be much less distant than it really was; a consideration which no doubt materially influenced him in determining to make the attempt.

NOTE A, p. 524.

RATE OF MARCHING IN AFRICA.

MAJOR Denham and Captain Clapperton took 68 days on their journey with a caravan from Mourzuk to the Lake Tchad; and 61 days on their return. Travelling in a similar manner they had occupied 34 days from Tripoli to Mourzuk, and took not less than 44 days on their return; but Major Denham, travelling express with only three servants and three camels, made this last journey in 20 days. Hence it is remarkable that the rate of marching of the Roman armies along this comparatively well-known part of the route was unusually rapid, as both Flaccus and Maternus agreed in reckoning it only 20 days' march (which they estimated at 5400 stadia) by the shortest line of route, though it took 30 days by the longer and more usual route. (Ptol. i. 10, § 2.)

The actual distance from Leptis to Garama (Germa, about 65 miles N.W. of Mourzuk), as measured in a straight line on the map, amounts to about 375 G. miles or 3750 stadia. The estimate of the Roman generals was therefore a great exaggeration; as might indeed be assumed from the circumstance, that it supposed a marching-rate of 27 G. miles (or 36 Roman miles) a day,—a rate which could not possibly be maintained by any army continuously for a considerable period. But it is probable, though not distinctly stated by Ptolemy, that this would be also the rate according to which they would calculate the farther advance to Agisymba, and by means of which they arrived at the preposterous conclusion, which even Marinus found it necessary to curtail to a considerable extent.

The real distance from Mourzuk to the nearest point of Soudan, near Lake Tchad, is only just about double that from Tripoli to Mourzuk; though the Roman armies appear to have consumed more than four times as long upon the march; a sufficient evidence of the utter vagueness of any calculation founded upon such *data* without further details.

If we suppose the same rate of marching from Garama to Agisymba as that from Leptis to Garama, the distance accom-

plished in 120 days would amount to 3240 G. miles or 54 degrees of latitude; but as Marinus certainly reckoned (as well as Ptolemy) only 500 stadia (or 50 G. miles) to a degree, this would be regarded by him as equivalent to 64⅘ degrees. Assuming his latitude for Garama to have been the same as Ptolemy's (21° 30′ N. lat.), this would carry the position of Agisymba down to 43° S. lat., or about 8° S. of the Cape of Good Hope! How he arrived at the first result of 24,680 stadia south of the Equator or 49½ degrees S. lat., as stated by Ptolemy, which he afterwards proceeded to reduce, we are at a loss to discover.

NOTE B, p. 564.

PTOLEMY'S LONGITUDES IN THE MEDITERRANEAN.

It may be convenient to the reader to exhibit in a tabular form the longitudes of the principal points in the Mediterranean as given by Ptolemy, and the actual longitudes of the same points computed from Ferro. It must however be carefully borne in mind that this meridian lay in fact much farther west than that assumed by Ptolemy from his supposed position of the Fortunate Islands. (See p. 567.)

	Longitude according to Ptolemy.	Real Longitude E. of Ferro.
Sacred Promontory	2° 30′ ..	9° 20′
Mouth of Bætis	5° 20′ ..	12°
Calpe (at mouth of Straits) ..	7° 30′ ..	13°
Caralis in Sardinia	32° 30′ ..	27° 30′
Lilybæum in Sicily	37° ..	30° 45′
Pachynus Prom. (do.)	40° ..	33° 25′
Tænarus Prom.	50° ..	40° 50′
Rhodes	58° 20′ ..	46° 45′
Issus	69° 20′ ..	54° 30′

The longitudes in the second column are given in round numbers for the greater facility of comparison.

NOTE C, p. 575.

LATITUDE OF THULE.

The position of Thule was evidently based upon the recent Roman information concerning that island, which, as has already been pointed out, certainly referred to the Shetland Islands. Eratosthenes had placed it in 66°, or on the Arctic Circle; an assumption evidently derived from the statement of Pytheas that at the summer solstice the sun was visible all the night through. But the Thule of Marinus and Ptolemy was placed with regard to the Orkneys, and supposed to be only a degree to the north of them, which necessarily brought it down to a lower latitude than that assigned by Eratosthenes and Hipparchus. Ptolemy indeed affirms that its longest day was of twenty hours (viii. 3, § 3), but it is most improbable that he had any positive authority for this statement, which was doubtless merely an astronomical conclusion from its assumed position on the globe, and as such, was almost precisely correct.

In placing Thule in latitude 63° Ptolemy of course carried it more than three degrees north of its true position. But if we allow for the erroneous graduation of his map, it would be really placed somewhat too far to the *south*. But its latitude was probably in reality calculated from that of Massilia, as the northernmost point of the Mediterranean of which the position was really determined by observation. According to Ptolemy the interval between the two would amount to just about 20 degrees, equivalent to $16\frac{2}{3}$ degrees of 60 geographical miles, which differs very little from the truth; Massilia being really situated in 43° 18′, and the southern extremity of Mainland in the Shetlands wanting only a few miles of 60°. It is indeed the middle of the island to which he assigns the precise latitude of 63°; but this difference is unimportant in such a case.

It would be clearly erroneous to suppose Ptolemy's assumed position of Thule to have been really calculated *from the equator*, in degrees of 500 stadia, which would bring it down to a *real* latitude of $52\frac{1}{2}$°, as Ptolemy had of course no positive observations on the equator; the geographical position of which he was obliged to assume. Almost all his latitudes for the Mediterranean must be taken with reference to the fixed parallel of Rhodes (in 36°) or to

that of Alexandria; and there can be little doubt that his latitudes for Gaul and Britain were all calculated in reality *from Massilia* as the fixed point of departure.

NOTE D, p. 584.

PTOLEMY'S MAP OF SCOTLAND.

A more plausible explanation is suggested by M. Roscher in his little work (*Ptolemaeus und die Handelsstrassen in Central Afrika*, 8vo, Gotha, 1857) that this distortion of the north of Britain was an attempt to reconcile the real latitude of certain points for which Ptolemy possessed correct astronomical observations, with the other parts of his map resulting from estimated distances (p. 18). But this hypothesis is based upon the assumption that the points given by Ptolemy in the eighth book were really fixed by such observations—a conclusion of which I have already endeavoured to show the fallacy. But in this instance even this supposition will not at all explain the difficulty. The most northern point of which Ptolemy professes to give the latitude in his eighth book (viii. 3, § 9) is a place called Πτερωτὸν στρατόπεδον, to which he assigns a solstitial day of 18½ hours, corresponding to a latitude of 60°. The position of this place (the name of which is not found in any Latin author, but is obviously a mere translation of the Latin Alata Castra) is wholly uncertain and it is merely by conjecture that it is usually placed at Burg Head on the Moray Frith. Assuming this to be correct, the interval of latitude between this point and the Isle of Wight, which he places in lat. 52° 20′, would be comparatively correct: and is therefore supposed to be based on real observations. But while Ptolemy has (singularly enough) given us no notices in the eighth book concerning any point on the west coast of Britain, he has in his tables carried up the whole series of positions much too far to the north, placing the Land's End in 52½° instead of 50°, the two headlands of South and North Wales, Octapitarum and Ganganum, in latitude 54½° and 55½° respectively, so that his assigned latitude of 61° 40′ for the headland of the Novantæ or Mull of Galloway, though still more in excess is not a single exceptional error.

Moreover the latitudes assigned by him in the eighth book to

Londinium (54° 30′), Eburacum (57°), and Cataractonium (58° 30′) are all greatly in excess, and could not possibly have been founded on observations with any pretension to a scientific character. To suppose that while all these positions of well-known and civilized places were thus glaringly erroneous, that of an unknown outpost in the far north of the island should have alone been correctly observed and reported, so that Ptolemy altered his whole map in accordance with it, is certainly at variance with all probability. It is equally at variance with M. Roscher's own view that the statements in the eighth book *generally* are based upon direct scientific observation.

The fact appears to be that in carrying up the west coast of Britain (as far as the peninsula of Galloway) so much too far to the north, Ptolemy was actuated in great measure by his erroneous idea of the position of Ireland, to which he correctly understood that peninsula to be directly opposite. On the other side, though it was generally understood that Britain was opposite to Germany, there could in this case be no definite means of connecting the two and fixing their relative positions in latitude. But having this general idea in his mind, Ptolemy might well hesitate to extend the north of Britain through four degrees more of latitude than he had already carried it, and to avoid this would give it a *slew* round towards Germany, so as to bring it into something like the same latitude as the Cimbrian Chersonese. It may be added that (as we have already seen) Ptolemy considered that he had grounds for placing Thule in latitude 63°, and as it was a point universally admitted that this island lay considerably to the north of Britain, it rendered it impossible for him to carry the northern parts of the mainland farther than about 62° of north latitude.

NOTE E, p. 597.

OXIANA PALUS.

Nothing but the unwillingness of modern writers to admit that the ancients were unacquainted with so important a feature in the geography of Central Asia as the Sea of Aral could have led them to suppose it represented by the Oxiana Palus of Ptolemy. While

that author distinctly describes both the Iaxartes and the Oxus as flowing into the Caspian Sea (vi. 14, §§ 1, 2), he speaks of a range of mountains called the Sogdian Mountains which extend between the two rivers, from which flow several nameless streams into those two, one of which forms the Oxian Lake (Ὠξειανὴ λίμνη, vi. 12, § 3). This statement exactly tallies with the fact that the Polytimetus or river of Soghd, which rises in the mountains in question, does not flow into the Oxus, but forms a small stagnant lake called Kara Kul or Denghiz: and there seems no doubt that this was the lake meant by Ptolemy. It is true that Ammianus Marcellinus in his description of these regions, which is very vague and inaccurate but is based for the most part upon Ptolemy, terms it a large and wide-spread lake (alii fluvii decurrentes Oxiam nomine paludem efficiunt late longeque diffusam—xxiii. 6, § 59) but this is probably nothing more than a rhetorical flourish. The Oxus Lacus of Pliny has of course nothing to do with it, being a lake (probably invented for the occasion) in which the Oxus was supposed to have its source. (Plin. vi. 16, § 48.)

NOTE F, p. 601.

PTOLEMY'S MAP OF INDIA.

Some excellent remarks on the portion of Ptolemy's work devoted to India, the nature of the different materials of which he made use, and the manner in which he employed them, will be found in Colonel Yule's introduction to his Map of India in Dr. Smith's *Atlas of Ancient Geography* (pp. 22–24). These remarks are indeed in great measure applicable to the mode of proceeding of the Alexandrian geographer in many other cases also, though the result is particularly conspicuous in India from the fullness of the information—crude and undigested as it was—which he had managed to bring together. The result, as presented to us in the tables of Ptolemy, is a mass of utter confusion, out of which it is very difficult to extract in a few instances any definite conclusions. The attempt of Lassen to identify the various places mentioned by Ptolemy is based throughout upon the fundamental error of supposing that that geographer possessed a map of India similar to

our own, and that we have only to compare the ancient and modern names in order to connect the two. As Col. Yule justly observes: "Practically he (Lassen) deals with Ptolemy's compilation as if that geographer had possessed a collection of real Indian surveys, with the data systematically co-ordinated. The fact is that if we should take one of the rude maps of India that appeared in the 16th century (e.g. in Mercator or in Linschoten) draw lines of latitude and longitude, and then *more Ptolemaïco* construct tables registering the co-ordinates of cities, sources and confluences as they appeared in that map, this would be the sort of material we have to deal with in Ptolemy's India."

But in fact the case is much stronger than Col. Yule puts it. For such a map as he refers to, of the 16th century, however rude, would give a generally correct idea of the form and configuration of the Indian peninsula. But this, as we have seen, was utterly misconceived by Ptolemy. Hence he had to fit his data derived from various sources, such as maritime and land itineraries, based upon real experience, into a framework to which they were wholly unsuited, and this could only be effected by some Procrustean process, or rather by a repetition of such processes, concerning which we are left wholly in the dark.

Colonel Yule's map of Ancient India is undoubtedly by far the best that has yet been produced: it is indeed the only attempt to interpret Ptolemy's data, upon which such a map must mainly be founded, upon anything like sound critical principles. But it must be confessed that the result is far from encouraging. So small a proportion of Ptolemy's names can find a place at all, and so many of those even that appear on the map are admitted by its author to rest upon very dubious authority, that we remain almost wholly in the dark as to the greater part of his voluminous catalogues; and are equally unable to identify the localities which he meant to designate, and to pronounce an opinion upon the real value of his materials.

NOTE G, p. 608.

IABADIUS.

The name of Java has certainly some resemblance with Iabadius, supposing that to be the correct form of the name, and what is of

more consequence Ptolemy adds that it signifies "the island of barley,"[6] which is really the meaning of the name of Java.

The position in latitude assigned by him to the island in question (8¼ degrees of south latitude) also agrees very well with that of Java: but his geographical notions of these countries are in general so vague and erroneous that little or no value can be attached to this coincidence.

On the other hand the abundance of gold would suit well with Sumatra, which has always been noted on that account, while there is little or no gold found in Java. The metropolis at its western extremity would thus correspond with Acheen, a place that must have always been one of the principal cities of the island.

In either case he had a very imperfect idea of its size, assigning it a length of only about 100 G. miles, while Java is 9° or 540 G. miles in length, and Sumatra more than 900 G. miles.

It seems not improbable that in this case, as in several others, he mixed up particulars which really referred to the two different islands, and applied them to one only: but it is strange that if he had any information concerning such islands as Sumatra and Java, he should have no notion that they were of very large size, at the same time that he had such greatly exaggerated ideas of the dimensions of Ceylon.

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[6] vii. 2, § 29, Ἰαβαδίου (ἢ Σαβαδίου) ὃ σημαίνει κριθῆς νῆσος.

CHAPTER XXX.

GEOGRAPHY AFTER PTOLEMY.

SECTION 1.—*Historical Events.*

§ 1. THE work of Ptolemy unquestionably marks the culminating point to which geographical science ever attained among the Greeks or Romans: and, as in the parallel case of his great astronomical treatise, it speedily obtained such a reputation as almost entirely to supersede all other works upon the subject. The paramount authority thus attributed to it was doubtless owing in great part to its scientific form and character; and in part also to the great and deserved reputation of Ptolemy as an astronomer, which led to an exaggerated estimate of his merits as a scientific geographer. But other circumstances contributed also to the same result; among the foremost of which must be placed the fact that the period of its appearance was that when the Roman Empire was at the height of its power and prosperity, which was speedily followed by a decline in literature as rapid as that in the condition of the empire. The two centuries which followed the publication of Ptolemy's geography were an age of compilations and abridgements, unmarked by almost a single work of original genius in the domain either of literature or science. The few remaining treatises of a geographical character which belong to this period all partake of the impress of this spirit: and while they scarcely contribute a single point to the extension of geographical knowledge, they show a total absence alike of critical sagacity and scientific intelligence.

§ 2. A very brief notice will suffice to indicate the few events during the period in question, which have any imme-

diate connection with geography. The Roman Empire had already attained to its utmost limits: and no subsequent extension contributed to widen the range of geographical knowledge. The wars of Marcus Aurelius with the nations north of the Danube, the Marcomanni, Quadi, Iazyges, and Sarmatians were for the most part of a defensive character, and calculated rather to repel the attacks of the barbarians than to carry the Roman arms into their country. It may well be doubted whether the accounts which represent these simultaneous incursions as the result of a combined plan of operations, or general confederacy among nations of different race, and widely spread through distant regions, have any foundation in truth: but it is certain at all events that we have here the first indication of that increasing pressure of the barbarians on the northern frontier of the Roman Empire, which was destined to give the determining character to the three following centuries.

It would be interesting to trace the gradual appearance among these threatening foes of the names that afterwards became so distinguished from the part they took in the destruction of the Western Empire: but the ethnographical questions connected with them are too complicated and uncertain for us to enter upon them here. It may suffice to mention that the name of the Vandals, as well as that of the Alani, appears for the first time among the invaders under M. Aurelius, while that of the Goths is not found until after the time of Caracalla. In the reign of the latter emperor also the Alemanni are mentioned for the first time among the most formidable of the German tribes.

The expedition of the Emperor Severus into Britain (A.D. 208–211) is one of the few events of this period which has any direct geographical interest; and concerning this unfortunately our information is only of the most vague and general kind. But it is distinctly stated by Dion Cassius, a contemporary writer, that the emperor advanced with his army through the wilds of the Caledonians to the extreme northern

point of the island, encountering extreme difficulties from the natural constitution of the country, but no opposition of any consequence from the natives.[1] It is remarkable that the only name of a British tribe mentioned by Dion, except the general term of Caledonians, is that of the Mæatæ, an appellation not found in any other ancient writer, but under which he appears to comprise all the inhabitants of the south of Scotland from the wall of Hadrian to the rampart of Antoninus.[2] But though he had thus extended his triumphant progress to the farthest limits of Britain, Severus appears to have seen the difficulty of retaining a permanent hold upon the wild and remote regions of the north, and contented himself with restoring and fortifying the wall built by Hadrian from the Solway to the Tyne.[3]

§ 3. In the East on the contrary the wars of Severus and his successors possess little or no interest for the geographer. They are not related with sufficient fullness to be of any use in supplying or explaining the topographical details of the countries between the Euphrates and Mount Zagros, which had so long been the field of battle between the Romans and the Parthians, and the general features of the campaigns were

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[1] Dion. Cass. lxxvi. 11–13. So great were the hardships and sufferings of the troops that not less than 50,000 were said to have perished in the course of the campaign; the natives continually hovering round the army and cutting off stragglers, though not a battle was fought.

The emperor is reported to have on this occasion caused careful observations to be made of the position of the sun and the length of the days and nights (Dion. Cass. *l. c.* 13), but unfortunately the results are not recorded.

[2] The Mæatæ are described as "immediately adjoining the cross wall which cuts the islands in two" (*οἰκοῦσι δὲ οἱ μὲν Μαιᾶται πρὸς αὐτῷ τῷ διατειχίσματι ὃ τὴν νῆσον δίχῃ τέμνει*, *l. c.* 11), and the Caledonians to the north of them. There can be no doubt that the *διατείχισμα* here meant was the wall of Hadrian, not the rampart of Antoninus Pius.

[3] "Britanniam, quod maximum ejus imperii decus est, muro per transversam insulam ducto utrinque ad finem Oceani munivit." Spartiani *Severus*, c. 18. No reference is here found to the previously existing wall of Hadrian; and we are left to conjecture as to the relation between the two: the author employing the same term "murus" in both cases. Another passage (c. 22), in which he uses incidentally the phrase "*post murum apud vallum missum* in Britannia," is certainly corrupt, and as it stands unintelligible.

Concerning the real connection of the work of Severus with that of Hadrian, see Bruce's *Roman Wall*, chap. v., and Hübner's *Inscriptiones Britannicæ*, pp. 100–102.

repeated again and again with little variation. Thus we find Severus himself in the first instance (A.D. 195) advancing, much in the same manner as Trajan had done, through northern Mesopotamia to the Tigris, crossing that river into Adiabene, and reducing that province to nominal subjection. In his second expedition (A.D. 197) he achieved more brilliant successes, but with little permanent result. Descending the valley of the Euphrates in person, while another army followed that of the Tigris through Adiabene he succeeded in making himself master of the Parthian capital of Ctesiphon, as well as of the two great cities of Seleucia and Babylon.[4] But the want of provisions compelled him to return, and having attempted on his homeward march to take the strong fortress of Hatra, which had already baffled all the efforts of Trajan, he met with an ignominious failure. Notwithstanding this disaster, it seems certain that not only the northern part of Mesopotamia—including Edessa, Nisibis, and Singara—but Adiabene also, remained in the hands of the Romans, and were for a time again constituted as provinces and formally annexed to the Roman Empire, as they had been by Trajan.

It is evident that at this period the Parthian Empire was already breaking up from internal dissensions and decay. It made indeed a last struggle under its king Artabanus, who in A.D. 217, after the death of Caracalla, defeated his successor Macrinus in a great battle near Nisibis, which is said to have lasted three whole days. But the peace which followed left the Romans still in possession of Mesopotamia; and a few years after began the revolt of the Persian prince Artaxerxes, which ended in the overthrow of the Parthian monarchy, and the final establishment of a Persian dynasty.

§ 4. The new monarchy thus founded became speedily involved in hostilities with Rome, in which however the Persians were almost always victorious, and far from the Roman emperors in the third century extending the limits

[4] Dion. Cass. lxxv. 9.

of their dominions towards the east, they not only saw Armenia subjected to the Persian yoke, but were unable to protect their own provinces against the invader. After the captivity of Valerian (A.D. 260), the armies of Sapor overran Syria, Cilicia, and Cappadocia, surprised and pillaged the wealthy city of Antioch, and reduced, after an obstinate siege, that of Cæsarea in Cappadocia.[5] But the Persian monarch did not retain possession of the conquered provinces; and the able and vigorous rule of Odenathus, as well as of his successor Zenobia, not only established the independence of their capital of Palmyra, but raised that remote and secluded city for a brief period to be the seat of an energetic and vigorous monarchy, comprising the whole of Syria with many of the adjoining provinces. The defeat of Zenobia by Aurelian (A.D. 273) was however followed by the destruction of Palmyra, of which nothing but the splendid ruins survived to confirm to future ages the record of its transient prosperity.[6] Not long afterwards (A.D. 283), if we may trust the statement of one of the Augustan historians, the emperor Carus not only traversed the whole of Mesopotamia, but actually took the city of Ctesiphon, so long the capital, or at least the royal residence, of the Parthian monarchs. Internal dissensions and disputes about the succession seem at this period to have weakened the Persian monarchy: and under the reign of Diocletian the successes of Galerius led to the establishment of a peace or permanent treaty between the two nations, by which a large portion of Mesopotamia was ceded to the Roman Empire, and the river Aboras or Chaboras was fixed as the limit between the two empires, thus leaving the strong fortresses of Circesium, Singara, and Nisibis in the hands of the Romans.[7]

[5] Cæsarea was undoubtedly at this period one of the most important cities of Asia Minor, but the statement of Zonaras that it was said to contain 400,000 inhabitants (Zonar. xii. p. 594, ed. Bonn), though adopted by Gibbon, appears to me a gross exaggeration.

[6] Gibbon (chap. xi.) justly remarks that "some English travellers from Aleppo *discovered* the ruins of Palmyra about the end of the last century" (1691). They were afterwards fully described and figured by Wood and Dawkins in 1753; and have in modern days been visited by many travellers.

[7] Circesium, which was situated at

But this arrangement did not last long. The Persian monarchy rose to renewed vigour under a second Sapor; and the possession of Mesopotamia, and especially of the newly ceded provinces became the subject of almost continual hostilities during the reign of Constantius.[8] After the accession of Julian, that emperor, who had already in the subordinate position of Cæsar distinguished himself in wars against the Alemanni and other barbarians on the frontiers of Gaul, undertook an expedition against the Persians, in which he hoped to rival the fame of Trajan, if not of Alexander himself. His success was indeed far from corresponding to his hopes, and as he did not advance beyond Ctesiphon, his proceedings could not throw any new light on the geography of Asia. But as we possess in this instance a detailed account of his campaign by Ammianus Marcellinus, who himself accompanied the army, it is interesting to compare the steps of his progress with those of the younger Cyrus and Alexander the Great.[9]

§ 5. Setting out from Antioch, in the spring of 363, he proceeded by way of Berœa (Aleppo) and Hierapolis to the Euphrates, which he crossed at the customary place of passage (Zeugma), and advanced to Carrhæ, a place of evil note among

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the confluence of the Chaboras with the Euphrates, was first fortified by Diocletian (Ammian. Marcell. xxiii. 5). The strongholds of Nisibis and Singara had already figured in earlier wars, and have been repeatedly mentioned. (See Chapter XXVI. p. 505.)

It may be noticed that no mention of Tigranocerta occurs during these later wars between the Romans and their eastern neighbours. The city had probably ceased to exist.

[8] It is to the interest excited by these wars that we are indebted for the publication at this period of the little work called the "*Itinerarium Alexandri*," dedicated by its anonymous author to the emperor Constantius, which was published for the first time by Cardinal Mai in 1817. Notwithstanding its title it is rather an abridged history of Alexander's campaigns than a geographical treatise, but it is equally worthless from either point of view. The author had, as he tells us, compiled a similar account of the expedition of Trajan to the East, which could hardly have failed to be of some value, as we possess no detailed record of his campaigns. But this is unfortunately lost. (The *Itinerarium Alexandri* is reprinted by C. Müller among the *Scriptores de Rebus Alexandri*, appended to his edition of Arrian. Paris, 1846.)

[9] For this campaign we have the unusual advantage of possessing two detailed narratives, that of Zosimus (iii. 12-31) being well worthy of comparison with that of Ammianus (xxiii.–xxv.). The latter writer, notwithstanding his inflated and rhetorical style, appears to be a trustworthy authority, but unfortunately his geographical statements are apt to be loose and indefinite.

the Romans from its connection with the ill-fated expedition of Crassus. From hence he despatched two of his generals with 30,000 men to the Tigris, with orders to cross that river, and descend through the provinces on its left bank, Gordyene and Adiabene, so as to meet the main army under the walls of Ctesiphon. He himself turned abruptly to the south, and again reached the Euphrates at the city of Callinicum, which had been founded by the Seleucidan kings near the confluence of the river Belias, and from whence he descended the course of the Euphrates to Circesium, the frontier fortress of the Roman territory. From thence he followed the valley of the great river as far as a place called Thillutha, a strong fortress on an island, surrounded by the Euphrates, which on account of the strength of its position was able to defy the arms of Julian.[1] The Emperor however pushed on as far as a village called Macepracta, situated at the extremity of the ancient wall which had been carried across from the Euphrates to the Tigris, the ruins of which were still visible.[2] It was at this point that a great canal called the Naarmalcha, or the Royal river, conveyed a large part of the waters of the Euphrates into the Tigris, and it was by this channel, or a branch of it, that Julian was able to transport his fleet from the one river to the other, as Trajan had previously done.[3]

[1] Thillutha is identified with a place called Thelbe or Tilbeh, where there are some remains of ancient buildings, on a small island in the Euphrates, about 8 miles below Anah or Anatho (Chesney's *Euphrates*, vol. i. p. 57). It is mentioned by Isidore of Charax (*Stathm. Parth.* § 1) under the name of Thilabus, as a place where a treasury was kept by the Parthian kings. But it is probable that its strength and importance are much exaggerated by Ammianus.

[2] "Ad vicum Macepracta pervenit, in quo semiruta murorum vestigia videbantur, qui priscis temporibus in spatia longa protenti tueri ab externis incursionibus Assyriam dicebantur." Ammian. xxiv. 2, § 6. These were evidently the remains of the wall, which traversed Babylonia in this part from the Euphrates to the Tigris, and the ruins of which, now called by the Arabs Sidd Nimrud, may still be traced through great part of its extent. (See Layard's *Nineveh and Babylon*, pp. 471, 578; and the *Journal of Geogr. Society*, vol. ix. pp. 445–6, 473–4.) It was wholly distinct from the Median Wall of Xenophon, with which it has often been confounded. (See Chapter X. Note L, p. 370.)

[3] There is great confusion in regard to this canal. It is described by Ammianus as quitting the Euphrates close to Macepracta, which would agree with the cut now known as the Saklawiyeh canal; but that at present termed the Nahr el Melik (evidently the same name with the Naarmalcha of Ammi-

The topographical details of this part of his operations are very obscure, but it would appear that several of the towns in this part of the country had been strongly fortified, and opposed a vigorous resistance to the Roman arms.[4] Julian however reduced several of these strongholds in succession, and succeeded in establishing himself with his army under the walls of Ctesiphon, on the left bank of the Tigris. But the fortifications of the capital were so strong as to defy all his efforts, and he was compelled to commence his retreat through the provinces on the left bank of the river.[5] Here he was harassed on all sides by the light troops of Sapor, and in one of these skirmishes was himself mortally wounded. The army continued its retreat under the command of Jovian, and rejoined the Tigris at Samara, but was unable to cross that river, and after following its banks as far as a place called Dura, the new emperor found himself compelled to purchase a treaty of peace, and the retreat of his army, by giving up to the Persian monarch the five provinces across the Euphrates, which had been ceded to the Romans by his grandfather.[6]

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anus) was considerably farther south. But it is this last canal, now in great part dry, which led direct to Seleucia and Ctesiphon, and which must therefore in all probability be the one by which Julian conveyed his fleet into the Tigris (Ammian. xxiv. 6). I have already pointed out, in the notes to the Anabasis of Xenophon, the impossibility of identifying these artificial channels by which the whole plain of Babylonia is intersected in all directions, and which have been made and remade by successive rulers in all ages, while from the nature of the soil they quickly become dry as soon as they are neglected.

[4] It is remarkable that none of the cities or fortresses which figure in this part of the operations of Julian are mentioned by any preceding writer. Perisabor or Persabora, as it is called by Zosimus (iii. 17), may however be probably placed on the site of the modern Anbar, near Felujah; but there is nothing by which to identify 'Maozamalcha, called by Ammianus "a large city and surrounded with strong walls" (xxiv. 4, § 2). On the other hand he himself tells us that Coche was the same with Seleucia ("Coche, quam Seleuciam nominant." Ib. 5, § 3), but it appears to have been no more than a fortress, occupying probably a part only of the site of that great commercial city, which three centuries before had been one of the most populous cities of Asia.

[5] It is, as Gibbon remarks, not very easy to understand how a city that had been three times taken by the predecessors of Julian could in his time have become so entirely impregnable; and it may well suggest a doubt whether the most recent capture by Carus, which is attested only by a passing notice in the Augustan Historians, is really entitled to be received as a historical fact. Ctesiphon had however certainly been taken both by Trajan and Severus, but it may well have been more strongly fortified by the new Persian dynasty.

[6] The localities on the Tigris mentioned in connection with the retreat of the Roman army under Jovian pre-

The expedition of Julian was the last in the long series of similar campaigns carried on by the Greeks and Romans in the valleys of the Euphrates and the Tigris, and which have given a peculiar interest to those regions. All the attempts of the Roman emperors to extend their dominion in that direction had either proved altogether failures, or had led only to the establishment of a temporary and precarious sovereignty. The ignominious treaty concluded by Jovian left the Euphrates still the boundary of the Roman Empire, in accordance with the wise precept of its original founder.

§ 6. Nor was the prudent foresight of Augustus less justified in the case of the European provinces. Here indeed the limits of the Rhine and the Danube had been for a time materially transgressed; first, by the gradual annexation of the tract known as the Agri Decumates, extending from the Rhine at Mayence to the Danube at Ratisbon; and far more largely by the addition of the extensive province of Dacia. But this last acquisition, though permanently annexed by Trajan, and reduced in form to the condition of a Roman province, was hardly really occupied as such, and its limits were vague and imperfectly defined.[7] We are told that Hadrian himself was desirous to have abandoned it, as he did the provinces lately acquired by Trajan beyond the Euphrates: and after the time of M. Aurelius it became at once the theatre and the cause of incessant wars with the neighbouring barbarians. At length Aurelian, while he for a time established the supremacy of the Roman arms in this quarter, judged it prudent to abandon the nominal sovereignty of a province which he was unable to defend, and withdrew all attempt at Roman administration beyond the Danube (A.D. 274).[8]

The period at which the Agri Decumates (which had never

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sent no geographical difficulties. Samara, where the army first returned to the Tigris, and attempted the passage of the river, was a place of importance under the Caliphs of Bagdad, and is still called Samarra. Dura also still retains its ancient name, as Dur; about 20 miles above Samara.

[7] See Chapter XXVI. p. 504, and Note A, p. 516.

[8] Vopisc. *Aurelian.* 39.

been formally included in a Roman province) were wrested from the Empire, cannot be determined with certainty; but it was probably the result of many successive struggles. The work appears to have been complete before the time of Probus (A.D. 276) and, in the subsequent wars of Julian with the Germans we find the Rhine recognized as the established boundary between Gaul and Germany.[9]

§ 7. In one instance only were the boundaries of the Roman dominion for a short time extended: and even this case rests upon doubtful authority. The island of Britain, which appears to have for some time enjoyed a period of tranquillity, and imbibed a large portion of that Roman civilization which was so deeply infused into the neighbouring Gauls, had begun, as early as the reign of Constantine, to be harassed and even devastated by the incursions of the barbarian tribes in the northern portions of the island—who now for the first time appear under the name of Picts and Scots, instead of that of Caledonians, with which the Romans were previously familiar[1] —while their coasts were ravaged by the piratical depredations of the Saxons. Matters at length assumed so serious an aspect that in A.D. 367 Theodosius, the ablest general of the empire, was dispatched by Valentinian I. to Britain to restore the Roman power in the island. This, we are told, he did so effectually that he not only cleared the established provinces of the barbarian invaders, but drove them back beyond the farthest limits then occupied, and constituted out of the

[9] Concerning these Agri Decumates, the whole history of which is very obscure, I can only refer my readers to Ukert (*Germanien*, pp. 267–285).

[1] Of course I do not mean by this expression to assume the much disputed conclusion that the Picts and Scots were ethnographically the same people with the Caledonians. But it is certain that while in Tacitus we read only of Caledonians as the inhabitants of Northern Britain, and their name is still found in Ptolemy (ii. 3, § 12), as well as in Dion Cassius on occasion of the expedition of Severus (lxxvi. 12, 13), we find the Picti and Scotti assuming the same prominent position in the pages of Ammianus (xxvii. 8) together with the Attacotti, a name which is not found in any subsequent historian. It is in reference to this expedition of Theodosius also that we find the Picts and Scots introduced in the often quoted lines of Claudian (*de iiii. Cons. Honorii*, vv. 31–33):

> "maduerunt Saxone fuso
> Orcades: incaluit Pictorum sanguine Thule,
> Scotorum cumulos flevit glacialis Ierne.

territory thus recovered, a fifth province, to which he gave the name of Valentia.[2] It has been generally assumed by modern historians, and writers on ancient geography, that the province thus recovered extended from the Tyne and the Wall of Hadrian to the rampart of Antoninus across the isthmus between the Firths of Clyde and Forth, so as to comprise Northumberland and the lowlands of Scotland: and though the expressions of Ammianus are too vague and general to indicate this conclusion with any certainty, it is perhaps the most plausible explanation. It is certain at all events that a province of the name of Valentia continued to subsist in Britain until the island was finally abandoned by the Romans in A.D. 409.[3]

SECTION 2.—*Greek Writers.*

§ 1. AMONG the writers on geographical subjects subsequent to Ptolemy the first place is undoubtedly due to PAUSANIAS, whose Description, or, as it may be more properly termed, Itinerary of Greece, stands alone among the monuments of ancient literature.[4] The object of the author was, however, an archæological, not a geographical, description of the country, and the arrangement is so strictly that of an itinerary, that he never pauses to give anything like a general sketch or outline of the physical and geographical features of each district, even when these are so remarkable as in the case of Corinth or Laconia. Defective as is the description of Greece by Strabo in these respects, that of Pausanias is still more deficient in everything like geographical insight into his subject: and invaluable as is his work to the topographer and

[2] Ammianus, xxviii. 3, § 7.

[3] See Note A, p. 672.

[4] Pausanias was nearly contemporary with Ptolemy, though somewhat younger. He flourished during the reigns of Hadrian, Antoninus Pius, and M. Aurelius; and as he in one passage (viii. 43) refers to the victories of M. Aurelius over the Sarmatians, his work could not have been completed before the year A.D. 176. (See Clinton's *Fast. Rom.* ad ann. 125, 176; and the article PAUSANIAS in Dr. Smith's *Biogr. Dict.*)

antiquarian at the present day, it can hardly be said to add anything to the knowledge of the geography of Greece (in the proper sense of the word), which we should derive from other sources. It may be supposed, indeed, that Pausanias assumed his readers to be already acquainted with the main characters and features of a country so well known as Greece: but there is little doubt that the omission was owing mainly to his own turn of mind, which was almost exclusively archæological and mythological. His work presents many points of resemblance with that of Herodotus,[5] though wanting all the higher qualities which have given immortality to the historian of Halicarnassus: but the manner in which he continually takes occasion to introduce digressions upon various subjects, often very slightly connected with the objects that give rise to them, not only reminds one strongly of the similar practice of Herodotus, but is almost unquestionably the result of direct imitation.

§ 2. By far the greater part of these digressions are of a mythological character: others refer to historical events connected with the monuments which he is describing: in a few cases only has he thus given us incidental notices of distant countries or nations, some of which are curious and interesting: not indeed for the information they convey, but as showing the amount of knowledge possessed by a highly cultivated Greek in the time of the Roman Empire of the remoter portions of the inhabited world. The most important of these passages is one where, after speaking of the Ethiopians as supposed to dwell on the shores of the Ocean river, he proceeds to disprove this idea at considerable length.[6] "The Ocean (he tells us) is not a river, but a sea, the most distant of all that are navigated, and the people that dwell on its shores are the Iberians and Celts; besides which it contains the island of

[5] These are well brought out by Mr. Tozer in his excellent remarks on the characteristics of Pausanias as a writer, in his *Lectures on the Geography of Greece*, p. 26.

[6] *Pausan.* i. 33, §§ 4–6. This discussion is introduced on occasion of the sculptures on a goblet, supposed to represent the Ethiopians.

the Brettani. The remotest of the Ethiopians above Syene extending to the Erythræan Sea are the Ichthyophagi, and the gulf around which they dwell is called that of the Ichthyophagi. It is those who inhabit Meroë and what is called the Ethiopian plain, that are the most just: it is they also who possess the Table of the Sun.[7] But these have no sea, nor any other river except the Nile. There are also other Ethiopians adjoining the Mauri, who extend as far as the Nasamones. For the Nasamones, whom Herodotus calls Atlantes, and other geographers Lixitæ, are the most distant of all the Libyan nations adjoining Mount Atlas: they do not grow any crops, but live upon the wild vines. But neither these Ethiopians nor the Nasamones have any river at all: for the waters that flow from Mount Atlas, though giving rise to three streams, do not form any considerable river, but are quickly swallowed up in the sands. Thus the Ethiopians do not dwell upon any river except the Ocean."

He then adds that many persons considered the water flowing from Mount Atlas, which was lost in the sands, to reappear again and give rise to the Egyptian Nile. He describes Mount Atlas itself as so lofty that its summits touched the heavens, and inaccessible on account of the waters and forests with which it was everywhere covered. The slopes of it facing the Nasamones were well known, but the side towards the sea had not, so far as he knew, been visited by any navigator.[8]

§ 3. Such is the curious medley of information which a writer like Pausanias thought it worth while to give to his readers as "the result of his inquiries" concerning the interior

[7] It is hardly necessary to remind the reader that these statements refer to the account of the Macrobian Ethiopians, given by Herodotus (iii. 17). But it is singular that Pausanias rejects without explanation the statement of the historian that *these* Ethiopians dwelt "upon the sea to the south of Libya." (See Chapter VIII. p. 272.)

[8] Id. ibid. §§ 6–7. The notion of the reappearance of the river from Mount Atlas, as the Nile is evidently the same idea in an imperfect form as the theory of Juba. But the strange confusion which led him to transfer the Nasamones to the foot of the Western Atlas is wholly unexplained. He appears to have confounded them with the Gætulians.

of Africa, and the different tribes of Ethiopians. In another passage he tells us that the Galatæ or Gauls dwelt at the extremity of Europe, on a sea of great extent, the opposite shores of which were unknown, and which was affected by tides, and contained monsters quite unlike anything found in other seas. It was through their land that the Eridanus flowed, on the banks of which the daughters of the Sun mourned the fate of their brother Phaethon. They were originally called Kelts (Keltoi), and it was only in later times that they came to be known as Galatæ.[9] He elsewhere says that the Thracians were the most numerous of all nations, except the Kelts; but that in his time the Thracians were all subdued by the Romans, and the Kelts also, so far as their land was worth having, but some parts of it were neglected by the Romans on account of the excessive cold and the barrenness of the soil.[1] Again, in another passage he gives a curious account of the arms and manners of the Sauromatæ or Sarmatians:[2] a people who had lately attracted much attention by the war waged against them by M. Aurelius.

But the most interesting of these incidental notices of distant countries, is that relating to the Seres and the production of silk, in respect to which he was better informed than any preceding writer, as he was aware that it was not produced, as generally believed, from the bark of a tree, but by an insect, which was kept and fed for the purpose by the Seres.[3] At the same time his geographical knowledge of their position was extremely vague. He says in the first instance that Seria was

[9] i. 4, § 1.

[1] i. 9, § 5. This doubtless refers to the Germans, who were generally confounded with the Gauls by Greek writers.

[2] i. 21, §§ 5, 6. It is difficult to believe that he is correct in stating that the use of iron was unknown to the Sarmatians in his day.

[3] vi. 26, §§ 6–8. The details which he adds are however altogether erroneous, as was not unnatural. He describes the silk-worms as a kind of small animal (*ζωΰφιον*) living in the earth, and about twice as big as a beetle (*κάνθαρος*), but in general appearance more resembling a spider, and having eight feet, like spiders. They were kept by the Seres in houses built for the purpose, and lived four years, during which they were fed on millet (*ἔλυμον*); but in the fifth year they were supplied with a kind of reed, of which they were excessively fond, and with which they gorged themselves till they burst, and then the thread which they had spun was found within them.

known to be an island in the inmost recess of the Erythræan Sea: but adds that according to some accounts, it was not an island surrounded by the sea, but one formed by the two arms of a river called the Ser, after the same manner as the Delta of Egypt. Still more strangely he states that the Seres, as well as the inhabitants of the adjacent islands of Abasca and Sacæa, were of Ethiopian race (!): though others said that they were not Ethiopians, but Scythians mixed with Indians.

These statements of Pausanias suffice to show how imperfect and erroneous were the views entertained even by cultivated literary men concerning the remoter regions of the world; and how little the amount of geographical knowledge actually possessed by such writers as Ptolemy and Marinus of Tyre was diffused through the Greek and Roman world in the second century.

§ 4. The work of Pausanias, which we have just been considering, was almost contemporary with that of Ptolemy, and its author was in all probability unacquainted with the writings of the great Alexandrian astronomer. But with this single exception, the geographical literature of the Greeks—if such a name can be given to it—during the three centuries that followed the publication of Ptolemy's work, consisted of nothing but dry and meagre abridgements, or clumsy compilations from previously existing materials. There were indeed few opportunities of making any real addition to the domain of positive geography: but it is evident that any one imbued with the true spirit of a geographer would have seen the necessity of combining the dry skeleton furnished by Ptolemy with such a descriptive account of the various countries and their leading natural features as had been already supplied by Strabo within a more limited range. But no one appeared that was able to accomplish this task: nor, so far as we are aware, was it ever attempted. The great popularity of Ptolemy appears to have had the effect of leading his successors to suppose that the work of the geographer was completed, and that when once the materials had been collected for laying

down with tolerable correctness on a map the different portions of the earth's surface, there was no more to be done. The work of Strabo, so much valued in later times, was treated with unaccountable neglect: and the whole science of geography was reduced to a mere enumeration of names and distances.

§ 5. Among these later Greek geographers, whose works have been in part at least preserved to us, the chief place is perhaps due to MARCIANUS of HERACLEA, who was the author of several works of considerable extent, which, had they been preserved to us entire, would have been not without some value.[4] The most important of these is that which he terms the Periplus of the Outer Sea, in which he undertakes to give a complete Periplus or Description of the Coasts of the Eastern and Western Ocean, together with the principal islands contained in them. With regard to the Inner Sea,[5] which extended from the Straits of Hercules between Europe and Africa, many writers, he tells us, had composed similar Peripli, of which he regarded that by Artemidorus of Ephesus as the clearest and most accurate. Of this he had composed a complete epitome, divided like his original into eleven books: but as Artemidorus was imperfectly acquainted with the geography of the more distant regions of the world, he thought it necessary to add two other books containing a similar description of the two external seas, or the Eastern and Western Oceans. This is in reality, notwithstanding that he makes considerable parade of having consulted all available sources, a mere compilation from Ptolemy, or rather from an author named Protagoras, who is otherwise unknown to us, but who, as we learn

[4] Nothing is known with any certainty concerning the period at which Marcianus wrote. Dr. C. Müller is content to acquiesce in the opinion of Salmasius and Holstenius that he flourished about the beginning of the 5th century (A.D. 400–410); but it must be admitted that this conclusion is merely conjectural.

It may be observed that even so late a writer as Marcianus had no distinctive name for the Mediterranean, and could only designate it as "the Inner Sea" (ἡ ἔσω θάλασσα), or still more precisely as "the sea within the Columns of Hercules" (ἡ ἐντὸς Ἡρακλείων στηλῶν θάλασσα).

It is more remarkable that he nowhere employs the name of Atlantis in treating of the Western Ocean.

from Marcianus himself, had as it were *recast* the tables of Ptolemy into another form, so as to give the distances from one point to another in stadia, instead of fixing the points themselves by their supposed latitude and longitude. The effect of this is to present the results in a more popular and easily intelligible, though less scientific, form; and the work of Marcianus must have had considerable advantages for the ordinary student of geography in his day. But when we come to examine it in detail, we find that it adds almost nothing to the knowledge of the external oceans and their shores, which could not be derived by a careful student from the statements of Ptolemy himself. This is particularly striking in the case of the farthest regions of the east, where the progress of discovery had been so rapid and the knowledge possessed by Ptolemy was so far in advance of that of his predecessors, that one might reasonably have hoped for some still farther extension of that knowledge. But the result is quite the contrary: and it is evident that neither Marcianus, nor Protagoras, from whom he more immediately copied, had any sources of information except the work of the Alexandrian geographer. Thus we find Cattigara still mentioned as the limit of the known and the unknown lands, and the coast described as trending from thence away towards the south, while the Sinæ are described as occupying the eastern side of the Great Gulf, the opposite side of which was formed by the Golden Chersonesus, which separated it from the Gangetic Gulf. But his account of all these regions is far from clear, and we should have been much at a loss to comprehend the idea that he had formed of them, had we not possessed the map of Ptolemy, from which it is in reality derived.

§ 6. In one instance only does he depart from the guidance of Ptolemy, and it is only to exaggerate still more one of his gravest errors. We have seen that while Ptolemy strangely ignored the projection of the great Indian peninsula towards the south, so as to place Cape Cory more than 13 degrees of latitude north of the equator, he had given an enormous ex-

tension to the island of Taprobane, which he carried from the immediate vicinity of Cape Cory down to more than 2° of *south* latitude.[6] But Marcianus, without indicating that he is diverging from his usual authority, gives the length of Taprobane from the northern promontory to the south, as not less than 9500 stadia, instead of the 6300 which would result from the figures of Ptolemy, assigning it at the same time a breadth of 7500 stadia, and a circumference of not less than 26,385 stadia. We are wholly at a loss to comprehend the origin of this extraordinary blunder. In all other respects Marcianus follows closely the statements of Ptolemy in regard to Taprobane;[7] and the proportion between the dimensions assigned is nearly correct, so that he appears to have had, like his predecessor, a tolerably accurate notion of the form of the island, at the same time that he made it more than twenty times as large as the reality! It may be worth while to add that he distinctly speaks of Taprobane as the only *great* island in the Indian Ocean, so that he knew nothing of Sumatra or Java, and had no idea of their importance.[8]

§ 7. In the second book Marcianus gives a similar Periplus of the lands bordering on the western ocean, which he, in common with Ptolemy, regarded as wholly distinct from the eastern. Beginning with the coasts of Spain, he proceeds to those of Gaul (which he calls Celto-Galatia), and then to Germany and Sarmatia, the coast-line of which he follows as far as the limit of the unknown land, from whence he supposes it to extend indefinitely towards the north. With regard to the whole of these coasts he had evidently no other information than that of Ptolemy, from whom all his names and facts are

[6] See Chapter XXIX. p. 603.

[7] Thus he places the Northern Promontory (Βόρειον ἄκρον) at a distance of 6350 stadia from the equator, which very nearly corresponds with the latitude assigned it by Ptolemy of 12° 30′. Moreover the summary which he adds, according to his custom, that the island contained 13 nations, 22 cities and emporia, 2 remarkable mountains, 5 remarkable rivers, &c., is obviously taken, as in all similar cases, from Ptolemy.

[8] We have seen (Chapter XXV. p. 92) that Ptolemy was aware of the existence of a large island, called Iabadius, which must correspond either with Sumatra or Java, but much underrated its importance and extent.

taken, though the different form and arrangement into which he has thrown them serves at first sight to disguise the closeness of his compilation. The same thing is the case with regard to the British Islands, of both of which he gives the dimensions with as much precision as if they were really derived from observations, though (as usual) he follows Ptolemy in the strange blunder of making the peninsula or promontory of the Novantæ (the Mull of Galloway) the most northerly point of Britain.[9] Nor had he any better notion of Scandia, which he describes as an island lying opposite to Germany and the mouths of the Vistula, and about 2500 stadia in circumference.

The work was completed by a Periplus of the western coast of Africa, which is now lost, but there is little to be regretted in this, as it was doubtless nothing more than a recapitulation of the statements of Ptolemy.

§ 8. The only other work of Marcianus that has been preserved to us is a mere fragment. It has been already mentioned that he had composed an epitome of the work of Artemidorus concerning the Inner Sea, which had it been preserved, would have been of considerable interest, as replacing the lost original. But not content with this he subsequently made an epitome of the work of one Menippus, a geographer who appears to have lived in the reign of Augustus, but of whom nothing more is known, though his name is occasionally cited by Stephanus of Byzantium. A part of this last work has been preserved to us, but is of very little value.[1] It begins indeed with an introduction of some interest

[9] His ideas of its form are however very confused, or at least very obscurely expressed, as he defines its *length* as extending from the Damnonian or Ocrian Promontory to that of Tarvodunum or Orcas, and its *breadth* from the same extremity in the south to that of the Novantæ. Were it not for our knowledge of the strange form given by Ptolemy to the island we should have been wholly at a loss to understand this description.

[1] From the somewhat confused manner in which Marcianus himself in his Introduction speaks of his two works, it was supposed by Hoeschel, who first published the fragment in question, that it was a portion of the Epitome of Artemidorus; and he was followed in this error by Hudson, and even by M. Miller in his recent edition of Marcianus (8vo. Paris, 1839). The miscon-

containing brief notices of the authors of similar Peripli, from Timosthenes downwards: among which he gives the palm to that of Artemidorus, but considers that of Menippus also as valuable, on which account he had prepared an epitome of it, but with additions and corrections of his own. Whether he had really added anything of importance we have no means of judging: the extant portion containing only a periplus of the southern coast of the Euxine, from the Thracian Bosphorus to the river Iris, concerning which we have abundant information from other sources.

§ 9. It would appear that at this period the tendency of writers on geography was almost wholly in the direction of these Peripli or descriptions of the coasts of the Mediterranean and its tributary seas: most of which however were not the result of any survey or systematic exploration, but mere compilations from earlier authorities. Of this kind is a Periplus of the Euxine which has been preserved to us without the name of its author, but has been repeatedly published as an appendix to that of Arrian on the same subject, though there is no connection between the two. The treatise of Arrian, as we have seen, was an original work, the result of his own observations and inquiries; while that of the anonymous author is a mere compilation of very heterogeneous materials. He has availed himself largely of the labours of Arrian, as well as apparently of those of Menippus; but he has mixed up with these numerous extracts from a much earlier Periplus, which must have been clothed in a poetical or at least a metrical, form. Almost the sole value of the extant work is indeed derived from the fact that its author has copied these statements with so little change, that not only can their metrical character be easily recognized, but the verses themselves may be readily restored. It has been generally admitted by all

ception was first pointed out by Hoffmann) *Menippos der Geograph*, 8vo. Lips. 1841), and his opinion has been adopted by C. Müller in his *Geographi Græci Minores*, vol. i. A careful perusal of the introduction can indeed scarcely leave a doubt on the subject.

the more recent editors that these are derived from the metrical Periplus of the Internal Seas, a considerable portion of which is still extant, and has been usually ascribed to Scymnus Chius, though, as we have already seen, without any authority.[2] But whoever may have been the author of the poetical treatise in question, it is certain that he had access to good materials; and the fragments thus preserved to us by our anonymous compiler contain a considerable number of facts regarding the dates and origin of the Greek colonies on the Euxine, which would be otherwise wholly unknown to us, and are a really valuable addition to our knowledge. The information thus derived is however almost entirely of a historical character; the geographical statements, such as the distances from point to point, given by the later Periplus, are taken almost exclusively from Arrian.

§ 10. Of a very different character is another Periplus, which has only recently been brought to light, and which has been unfortunately preserved to us only in a very imperfect and fragmentary form:[3] otherwise it would have been one of the most important works of its class that has been transmitted to us. It bears the title of STADIASMUS OF THE GREAT SEA—an expression undoubtedly meant to designate the Mediterranean[4]—and comprised, when entire, a complete Periplus of its coasts, beginning from Alexandria, and proceeding westward to the Strait of the Columns; then returning to Alexandria and following the coasts of Syria and Asia Minor to the Bosphorus and the entrance of the Euxine. Hence it again returned along the European coasts to the Strait of the Columns and Gades. Unfortunately the portions

[2] Chapter XVIII. p. 70.

[3] It was first published by Iriarte from a MS. in the library at Madrid in 1769, and was afterwards reprinted by Gail in his edition of the *Geographi Græci Minores*,' vol. ii., but much more carefully by C. Müller in his edition of the same writers (vol. i. p. 427), who has added an elaborate commentary and copious illustrations from the works of modern writers. This is indeed the only edition of which the student of ancient geography can make use.

[4] This term appears to have come into use in Byzantine times; it is not found in any earlier Greek author, but is of very common use among later Latin writers.

that remain to us contain only the coast of Africa, from Alexandria to Utica; the coasts of Syria and Asia Minor from Carnæ in Phœnicia[5] round to Miletus, and two separate and detailed descriptions of the islands of Cyprus and Crete. Of these by far the most interesting and important portion is the first, describing the coast of Africa in minute detail, adding in every instance the distance from point to point. A comparison of these details with those furnished by Ptolemy, while showing such an agreement between the two, as strongly to confirm the accuracy of both, presents at the same time such differences as to show that the series of names given in the Periplus now extant cannot have been derived from the work of Ptolemy, but must proceed from some independent source.[6] This fact is still more clearly established by the circumstance that throughout this part of his work the author adds to the name of each station a designation of its nature and character, such as: "a port," "a roadstead," "a place of anchorage;" as well as sometimes a notice of "a lofty tower," or other striking object that would meet the eye of the navigator; and occasionally still more precise directions where and how to anchor.[7] In short the whole document bears unquestionable evidence of being a practical work derived from actual observation and experience, and designed for the use of other navigators. Considered from this point of view it is far superior even to Arrian's Periplus of the Euxine, which is the most detailed and accurate of all other works of the class.

The second portion, which contains the Asiatic coasts from the confines of Phœnicia to those of Ionia, is of very inferior merit; being given in much less detail, and almost wholly

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[5] Carnæ appears to have been identical with the place called Ἀνταράδος by Ptolemy (v. 15, § 16). It is called Κάρνος by Strabo (xvi. 2, § 12), who terms it τὸ ἐπίνειον τῆς Ἀράδου.

[6] The greater part of these differences arise from the insertion of *additional* names in the Stadiasmus, not from the omission of such as occur in Ptolemy. M. C. Müller has rendered an invaluable service to the student by inserting in his notes comparative tables of the two.

[7] See Note B, p. 672.

destitute of the descriptive notices above alluded to. This is followed by a number of distances in the Ægean Sea, measured from Rhodes, Myndus, Cos, and especially from Delos to all the surrounding islands of the Cyclades. Unfortunately these are scarcely ever accompanied with bearings,[8] and the numbers in our extant MS. are so corrupt and erroneous, as to be scarcely worth examining. The detailed descriptions of the coasts of Cyprus and Crete afford very valuable materials for the special geography of those islands, and for the identification of the ancient cities. A comparison of the copious list of names found in these islands with those given by Ptolemy and Pliny will sufficiently establish the fact that here also the work of the anonymous author is based upon independent and authentic materials.

§ 11. Besides the Peripli which we have just been considering, the only other geographical works that remain to us are brief and meagre treatises intended to serve as a general introduction to the study of geography. Of these the best known is that which is extant under the name of AGATHEMERUS; but it is a very poor and worthless production. The author indeed has with becoming diffidence termed it merely "a Sketch" or "Outline" of Geography,[9] but it is evident that the merest sketch might be,—as a popular introduction at the present day would be—clear and systematic. But this is so far from being the case that we find merely a compound of heterogeneous parts, collected from very different sources and put together without any regard either to

[8] In regard, however, to the voyage from Cos to Delos, which was of special importance as connecting the Asiatic islands with the Cyclades, we find the following details: "The voyage from Cos to Delos by the most favourable course, with an east wind (Apeliotes) is of 1300 stadia. You must sail first to Calydna, leaving Hypsirisma on your right hand; and afterwards keep Calydna, Leros, and Patmos on the right, and the Melantian rocks and Myconus on the left, and then Tenos on the right and you will arrive at Delos."

[9] *Γεωγραφίας ὑποτύπωσις.* Nothing is known concerning the age of this Agathemerus, and there is no internal evidence to determine the question. The little work was first published by Tennulius in 1671, and has since been included in all the editions of the *Geographi Græci Minores.*

connection or consistency. Thus while the author in general follows Ptolemy, and gives the division of the earth into climates by 23 circles parallel with the equator, precisely in accordance with the statements of that author, he at the same time gives the circumference of the earth according to Eratosthenes, without any hint that it was different from the measurement of Ptolemy. In like manner he gives the dimensions of the Inhabited World, both in length and breadth, according to Artemidorus,[1] though without citing his name, evidently without the least idea how utterly irreconcilable the numbers thus given are with the system of Ptolemy. At the same time he in this passage begins the measurement of the world in the far east from the mouth of the Ganges, though he elsewhere places the Sinæ to the east of India, and terms Serica the most eastern land of Asia.[2] Here also he was evidently following the lead of Artemidorus. There is nothing indeed more characteristic of these later compilers, than their inability to discriminate between different authorities, and to see that geography was a progressive science in which the later and more extended knowledge necessarily superseded to a great extent that which had gone before. For writers subsequent to Ptolemy to go back to the statements of Eratosthenes and Artemidorus was as if, at the present day, we were to find the authority of Rennell or D'Anville cited as conclusive in regard to the geography of Africa or Central Asia.

§ 12. Before quitting these miserable remnants of the later

[1] This we learn from the precise agreement of this calculation, which is given in considerable detail, with that furnished by Pliny on the authority of Artemidorus (Plin. *H. N.* ii. 108, § 242). Hence in this instance Agathemerus is really of some use in assisting us to correct the numbers given by Pliny, and restore the corrected statements of Artemidorus. (See Chapter XVIII. p. 64.)

[2] According to the latest editor (Dr. C. Müller) the supposed work of Agathemerus, brief as it is, is in fact made up of three little treatises or fragments which had originally no connection with one another. This explanation would go some way towards accounting for the inconsistencies and repetitions which are found in it; but the fact would still remain that these anonymous writers were wholly without any clear comprehension or knowledge of the subject which they attempted to expound.

Greek geographers, it is necessary to notice a work which, though not strictly of a geographical character, is so closely connected with that subject as to require a place in any review of its literary progress. This is the Lexicon, or as it is commonly termed, Geographical Dictionary, of STEPHANUS of BYZANTIUM, a compilation which has frequently been cited in these pages, and to which every writer on ancient geography must occasionally have recourse. The date of its composition is unknown, and can only be determined within approximate limits, but it may probably be assigned to the end of the fifth or beginning of the sixth century.[3] Within less than a century after the publication of the original work, an epitome or abridgement of it was composed by a grammarian named Hermolaus, and it is unfortunately this abridgement, and not the original, that has been preserved to us. A few fragments only of the more copious Lexicon of Stephanus himself have been casually preserved, and these suffice to show us how much more interesting and valuable the original work would have been, than that which alone remains to us.[4] Still the essential character of the two is the same. The object of Stephanus, like that of Hermolaus, was grammatical, not geographical: and while he has transmitted to us the names of many cities and tribes, which would otherwise have been unknown, he has done so solely with the view of pointing out the ethnical or adjective form of the name, as sanctioned by the usage of the

[3] Concerning the date of Stephanus and his abbreviator Hermolaus, I must refer my readers to Westermann's Preface to his edition; and to the article STEPHANUS in Dr. Smith's *Dict. of Biogr.* vol. iii. It is certain that Stephanus wrote *after* Marcianus of Heraclea, whom he frequently cites; but the age of that writer, as already observed, cannot be determined with any certainty.

[4] These fragments consist of: 1. The portion of the work from the article Δύμη to the end of the letter Δ, unfortunately only a few pages in length, which has been accidentally preserved in a MS. of the Seguerian Library. 2. The article Ἰβηρίαι δύο, which is preserved by Constantinus Porphyrogenitus (*de Administr. Imp.* c. 23); and, 3. An account of Sicily, quoted by the same author (*de Themat.* ii. 10), which includes a passage from the comic poet Alexis concerning the seven largest islands in the world. All these fragments, which are not found in the earlier editions of Stephanus, have been inserted in their proper places in the two most recent editions by Westermann (8vo. Lips. 1839) and by Meineke (Berolin. 1849).

best writers.[5] Geographical information, properly speaking, there is generally none at all, beyond the addition to each name of the country in which the city is situated, or the sea in which the island is found. He tells us, for instance, that Eleutherna was a city of Crete, so named from one of the Curetes; that the ethnic form was Eleuthernæus, but Eleutherneus was also used; that the Elisyci were a Ligurian tribe mentioned by Hecatæus:[6] that Elmantica was a city of Ibèria beyond the river Iberus, the name of which was found in the third book of Polybius; the ethnic was Elmanticus. In many cases, indeed fuller information is given, but it has generally reference only to the grammatical forms, or sometimes to the name of the founder or to some mythical legend connected with the name.[7] In the original work, so far as we can judge from the few remaining fragments, it seems that Stephanus generally cited the actual passages from his authorities, where his epitomizer has contented himself with merely citing their names, and as his quotations range over a wide field, from Hecatæus and Herodotus to Strabo and Pausanias, it is certain that had we the advantage of possessing his work in its entirety hundreds of passages from authors now lost would in this manner have been preserved to us.[8] He would also have no

[5] This is shown even by the title of his work, which is usually cited as *Ἐθνικά*. A fuller description of it is given by the grammarian to whom we are indebted for the important fragment beginning with *Δύμη*. He entitles it: *Στεφάνου γραμματικοῦ Κωνσταντινοπόλεως περὶ πόλεων νήσων τε καὶ ἐθνῶν δήμων τε καὶ τόπων καὶ ὁμωνυμίας αὐτῶν καὶ μετωνομασίας καὶ τῶν ἐντεῦθεν παρηγμένων ἐθνικῶν τε καὶ τοπικῶν καὶ κτητικῶν ὀνομάτων.* These words define exactly the real purpose and object of the work of Stephanus.

[6] The citations from Hecatæus are especially numerous in Stephanus, and form a large proportion of the extant fragments of that author (see Chapter V. p. 136). But unfortunately these, as preserved in the extant epitome, are for the most part mere names. It is probable that in the original work each of these names was followed by a brief extract from the writings of Hecatæus, and such a number of extracts, though but a line or two in length, must have thrown considerable light upon the character of his work and the manner in which the author treated his subject.

[7] See for instance the article on Ægina, which consists even in the abridgement of fifteen lines, but is almost wholly occupied with discussing the ethnic forms and the relative propriety of *Αἰγινήτης*, *Αἰγινεύς*, *Αἰγιναῖος*, and *Αἰγινητικός*; while he erroneously calls it one of the Cyclades (!)

[8] To judge from the analogy of the few fragments of the letter Δ, we find that the practice of Stephanus was, in regard to his shorter articles, to give first the name of the city and the

doubt transmitted to us a number of notices of a mythological or historical character, which are not found elsewhere; but from the very scope and purport of his Lexicon, it is almost certain that we should have derived from it little additional information of a geographical kind.

At the same time it must be borne in mind that Stephanus himself was evidently, like most of the Byzantine grammarians, an uncritical, though laborious, compiler; and though there can be no doubt that many of the errors which we find in the existing work are due rather to the abbreviator than to the original author, yet it would be very rash to confide too hastily in his statements, even where we have reason to believe that they proceed from Stephanus himself. For his purpose it was sufficient that he found the name in his original authority, and cited it correctly. Whether it was derived from Hecatæus or Strabo, from Polybius or Marcianus, was no matter. It is certain that the geographical names included in his Lexicon belong to very different periods, and were never co-existent at one time: and though he has taken pains in some instances to point out the changes that had taken place in the appellations of the same cities, as well as to distinguish between the cities of the same name, so numerous in Greek geography, such as Apollonia, Heraclea, &c., these articles are seldom free from confusion and difficulty.[9]

country in which it was situated; next a quotation from some author who mentioned it, citing the words of the original; and then the ethnic form derived from it. But his epitomizer usually omits the quotation, contenting himself with merely citing the name of the author and his book. See the articles Ἀνδασον, Ἄνστος, and Ἀῶρα—and compare them as they stand in the epitome, with the full text as given in Meineke's edition. Even where the articles found in the epitome are somewhat fuller and more elaborate, such as Ἀυρράχιον and Ἀωδώνη, we find by a similar comparison how far they fall short of those in the original work.

[9] See the discussion on the different cities of the name of Alexandria in Chapter XII. p. 464, and some judicious remarks in respect to those called Apollonia by M. Waddington (*Voyage Numismatique en Asie Mineure*, p. 129), one of the few numismatists who has appreciated Stephanus at his true value. Great as has been the confusion introduced into ancient geography by an over-reverence for his authority, its effect upon numismatics has been still more injurious.

NOTE A, p. 665.

PROVINCE OF VALENTIA IN BRITAIN.

This we learn with certainty from the Notitia Dignitatum, which must have been published soon after the reign of Theodosius. The provinces of Britain are there enumerated as follows: Maxima Cæsariensis, Valentia, Britannia Prima, Britannia Secunda, Flavia Cæsariensis. (*Notit. Occid.* c. 22.) But it affords us no further clue. The order followed is certainly *not* a geographical one: and the division and limits of the other four provinces are alike unknown to us. As Dr. Latham has justly observed, "We do *not* know the distribution and boundary of these five provinces, though they are often given;" and are to be found laid down in most atlases of Ancient Geography, as if they were as definitely known as the provinces of Gaul or Spain. Were it certain that the whole territory south of the Wall was previously divided into four provinces, it would be natural to assume that Valentia was the province north of this, extending as far as the rampart of Antoninus Pius: indeed it could not well be anything else. But we know nothing of this previous division: and it is difficult to understand the disposition of the Roman forces in the island, and the supreme importance attached to the line of the Wall of Hadrian at the date of the Notitia, if the whole province of Valentia lay to the north of it. (See the *Notit. Occid.* c. 38.)

NOTE B, p. 666.

THE STADIASMUS OF THE GREAT SEA.

As the Stadiasmus, not having been contained in the earlier editions of the minor Greek geographers, is still but little known, it may be worth while to give a few specimens of the kind of notices thus inserted for the information of its readers. Thus we find in § 14:

"From the Hermæan Promontory to Leuce Acte (the White

Shore) 20 stadia. A low and small island lies there, distant from the land 2 stadia. There is a sheltered roadstead (ὕφορμος) for merchant vessels, against the west winds. But on the land under the promontory is a spacious roadstead for all kinds of vessels. A temple of Apollo, with a celebrated oracle: it has water by the side of the temple."

Again, § 18: "From the Calamæum to Græas Gonu (the Old Woman's Knee) 70 stadia. It is a rugged promontory, having a rock on the height: and on the shore is a tree. It has a place of anchorage, and water beneath the tree. Beware of the south wind."

In § 57 we find still fuller sailing directions: "From Teuchira to Berenice are 350 stadia. The course of navigation takes a bend. After you have sailed 6 stadia you will see a promontory standing out towards the west. Off it there lie shoals out at sea: take care as you sail by them. You will see a little black islet. The headland is called Brachea (the Shoals): it has a place of shelter on the left for small vessels."

Even with regard to great cities like Leptis and Carthage, particular directions are given as to how to approach them and where to anchor: and at all the minor stations especial notice is taken of where water will be found: a point of the highest importance in coasting along the thirsty shores of Africa.

Such a practical manual for the use of navigators is evidently something quite different from any other existing Periplus: and it is much to be regretted that it has not been preserved to us in a complete form. But, as mentioned in the text, the portions that have been preserved to us are of very unequal value: the coasts of Syria, Cilicia, and Pamphylia being described in a summary and perfunctory manner, which presents a great contrast to the minute details given in regard to Africa. Yet still even here we find not merely names and distances (as in other Peripli), but occasional notices which can only be intended for the use of the practical navigator.

It is unfortunate that we have no clue whatever to the age of this interesting document. The MS. in which it is found (associated with other works of the Byzantine age) is pronounced by M. Müller to be of the tenth century: and it seems probable that the title and the brief introduction prefixed to it were added at that period, or at all events long after the composition of the

original work. This may be safely pronounced from the internal evidence alone to belong to an age while the Roman Empire was still great and flourishing; the agreement of the details with those given by Ptolemy is indeed so close as to exclude the possibility of their being separated by any very wide interval of time, and on the whole there seems little doubt that the work in question, or some portions of it at least, may be referred to the third century of the Christian era. Dr. C. Müller would assign it to the second half of that century, or between A.D. 250 and 300. (See his *Prolegomena*, p. cxxiii.–cxxviii.)

CHAPTER XXXI.

GEOGRAPHY AFTER PTOLEMY.

Roman writers.

§ 1. If the Greek literature of the three centuries which followed the age of Ptolemy presents us with no geographical work really deserving that name, and has nothing to show but meagre abridgements and clumsy compilations, still more was this the case with the contemporary Latin literature. We have already seen how little disposition the Romans evinced even in their best days to cultivate this branch of study, and how far even Pliny himself was from possessing any true conception of scientific geography. Unfortunately his encyclopædic work, from the great mass of materials which it contained, became the storehouse from which almost all later writers were content to draw; and even the geographical portion of it—imperfect as it really was—came to be regarded as the basis of all subsequent treatises on this subject. At the same time the decline in the general spirit and tone of literature, which so strongly marked the third and fourth centuries of the Christian era, extended its influence to this branch also, and it is difficult for anything to be conceived more destitute of literary merit than the few works that remain to attest the condition of geographical science—if such a name can be applied to it—during this period.

Of these by far the best known is that of Solinus, who appears to have flourished in the third century,[1] and who

[1] This appears to be well established on the internal evidence of the work itself; though we have no clue to its exact date. See the article Solinus in Dr. Smith's *Dict. of Biography*, vol. iii. and the Prolegomena of M. Mommsen to his valuable edition (Solini *Collectanea Rerum Memorabilium*, Berolin. 1864), in which he has for the first time presented Solinus to the reader in an authentic and intelligible form.

conceived the idea—by no means an unhappy one, had it been better executed—of *recasting* the work of Pliny in a different form and arrangement, so as to present a general geographical description of the world, inserting under the head of each country notices of its more interesting and characteristic productions, whether animals, plants, or minerals.[2] Unfortunately his ideas of geography were of the rudest kind, and where he has not copied Pliny almost literally, his forms of expression are often such as could scarcely convey the slightest notion of the geographical position or relations of the countries to which he refers. His principal object indeed was evidently to collect all "the remarkable things" that he could, with a view to interest his reader,[3] and the geographical framework in which they were set, was regarded merely as a convenient mode of arrangement.

By far the largest part both of his facts and fictions respecting natural history—probably nine-tenths of the whole—are taken directly from Pliny;[4] and the same thing is the case, even more universally, with his geographical statements. He has indeed not unfrequently had recourse to the earlier authority of Mela, but the passages which he copies from that author almost all relate to the manners and customs, or other local peculiarities of the nations mentioned, rather than to questions of a strictly geographical character.

[2] Thus he gives a full account of elephants (taken, as usual, entirely from Pliny) in connection with Mauretania: of bears under the head of Numidia; of lions, hyænas and serpents under Africa; of tigers and panthers in Hyrcania; of deer in Scythia; of cranes in Thrace; of pearls in Taprobane; of coral in the Ligurian Sea, &c. In some instances this association is purely arbitrary, as where he describes wolves and lynxes in Italy, or horses in Cappadocia; in other cases it is of a very fanciful kind; thus he takes occasion to describe quails and their migrations, in connexion with Delos, because it was once called Ortygia; and still more strangely treats of partridges and their habits under Bœotia, because none are found there!

[3] The original title of his work was "*Collectanea Rerum Memorabilium.*" That of Polyhistor, by which it is more generally known, is, according to Mommsen, an invention of later grammarians, and the preface which accompanies it is supposititious.

[4] M. Mommsen has taken the pains (for which all readers of Solinus will be deeply grateful to him) to insert in the margin of each page of his edition a reference to Pliny for all passages and statements derived from him by Solinus, so that the student can see at a glance how little there is that is *not* so derived.

§ 2. Among the very few instances in which Solinus has added anything that is not either in Pliny or Mela, is his notice of the British Islands,[5] concerning which, as we know, so large a mass of information must have been available in his day which was unknown to his earlier authorities. Yet what he has added is at once scanty and of very little value. He has indeed preserved to us one name not found in any other ancient writer—that of the island of Thanet (Tanatus);[6] but on the other hand he describes the land of the Silures as *an island*, separated from that of the Dumnonii by a stormy sea, while his account of Ireland (Hibernia) is principally taken from Mela, though he notices the peculiarity—not found in the earlier geographer—of its being free from snakes. From what authority he derived the strange tale of Ulysses having visited the extreme angle of Caledonia, and dedicated an altar there, with a Greek inscription, we are at a loss to imagine.[7] The only natural production of the British Islands, which he condescends to mention is the stone called "gagates," evidently no other than jet, which was known to Pliny only as coming from Lycia,[8] but was found to be much more abundant in Britain.[9] No mention is made of tin, but he elsewhere repeats the statement of Pliny concerning British pearls.[1]

In respect to the Seres and the nature of silk, he simply

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[5] c. 22.

[6] This had been obliterated in the earlier editions, owing to the corruption of the MSS. in which the name was written Adtanatos, but there can be no doubt that M. Mommsen has restored the true meaning, "At Tanatus insula," &c.

[7] The passage found in the ordinary editions of Solinus (*e.g.* the Bipont. of 1794) concerning Thule and the voyage thither, as well as the Orcades and Hebudes, is undoubtedly an interpolation of much later date. See Mommsen's *Prolegomena*, pp. xlvii.–xlix.

[8] *H. N.* xxxvi. § 141.

Throughout his work Solinus is especially diligent in noticing all the gems and precious stones that were found in each country: and has incorporated a great part of the portion of Pliny's work devoted to this subject. We have noticed the same tendency in Dionysius Periegetes; and the poetical treatise on precious stones (Λιθικά), absurdly ascribed to Orpheus, is really a production of the second or third century after Christ. This excessive interest in the subject of gems, seems to have continued throughout the middle ages, and a poetical treatise concerning them by a monk named Marbodus in the 11th century is for the most part a direct paraphrase from Solinus. (See King *On Antique Gems*, pp. 389–428.)

[9] c. 22. [1] c. 53, § 28.

repeats the statements of Pliny, without the smallest indication of the greatly increased information on the subject possessed by Marinus and Ptolemy. Nor does he mention the Sinæ, or allude to the existence of the vast regions in the Indian Sea beyond the Ganges. Not a trace is indeed to be found throughout his work of any acquaintance with that of the great Alexandrian geographer: nor is there any evidence of his having made use of a single Greek writer. It is more extraordinary that while the great bulk of his work is compiled bodily from Pliny—sometimes in the very words of the original, more frequently paraphrased in his own barbarous and obscure style—he never alludes to his obligations to that author, although he repeatedly refers by name to earlier writers, with whom he was undoubtedly acquainted only through the medium of Pliny.[2]

But with all its defects the compilation of Solinus obtained such popularity in its day, as to replace to a considerable extent its more voluminous original, and it will be found on examination that the greater part of the later compilers, such as Isidorus and Martianus Capella, through whom the learning of Pliny passed into the middle ages, derived their information principally from Solinus, and not directly from Pliny himself.[3] The barbarous style of our author with its perpetual distortions, and attempts at rhetorical grandiloquence, so repulsive to a scholar at the present day, doubtless on the contrary contributed greatly to the favour his work enjoyed during the centuries that followed its publication.

In one respect Solinus shows a marked approach to a well-established point of geographical nomenclature in later times, by the use of the term "mediterranean" to designate the

[2] A striking example of this is found in his description of Mount Atlas (c. 24), where, after giving many particulars concerning that mountain and its neighbourhood, the whole of which are taken from Pliny, he proceeds to cite the "Punici libri" of Hanno, and the Roman annals ("nostri annales," evidently referring to Polybius, who is somewhat strangely termed by Pliny "annalium conditor"), as well as the works of Juba and Suetonius Paulinus, as if he had himself derived his statements from those authorities.

[3] See Mommsen's *Prolegomena* and his notes.

chain of inland seas extending from the Strait of the Columns to the interior of the Pontus Euxinus. He does not indeed as yet use it as a proper name[4] for the great inland sea so called in modern times, which he still designates only as "nostrum mare": but it would soon come to be employed in that restricted and definite sense, when once its use was admitted as a geographical term. The first extant author who employs it distinctly as a proper name is Isidorus, who wrote in the seventh century:[5] and as has been already mentioned, to a great extent copied Solinus.

§ 3. The historians of the declining period of the Roman Empire are almost as defective as the geographers: and we could hardly expect to find any geographical notices of interest in the gossiping and desultory biographies of the Roman Emperors extant under the name of the Writers of Augustan History, or the meagre abridgements of Eutropius and Sextus Rufus. But there is one writer who forms a complete exception to this character: AMMIANUS MARCELLINUS, notwithstanding his inflated style and tendency to rhetorical exaggeration, possessed many of the qualities of a true historian,[6] and among others he was thoroughly sensible of the close connection between history and geography, and the necessity, both to the reader and writer of history, of a clear comprehension of the geographical relations of the countries

[4] This is evident, notwithstanding that the name is written in the earlier editions of Solinus from the Aldine downwards with a capital letter. But in the first passage where the name occurs (c. 18), it is introduced with reference to the Euxine ("Quoniam in Ponticis rebus sumus, non erit omittendum unde *mediterranea maria* caput tollant"), where the use of the plural, as well as the general sense, show clearly that it is meant only to designate "the inland seas" generally, as opposed to the external Ocean. This is still more clearly seen in the other passage (c. 23, § 13), where, immediately after using the phrase of "nostrum mare" as applied to the sea adjoining the Straits ("Sed Gaditanum fretum . . . Atlanticos æstus *in nostrum mare* discidio immittit orbis"), he adds "nam Oceanus . . . mixtus *mediterraneis sinibus* quos ad usque Orientem propellit."

Pliny frequently uses the term "mediterraneus," but always in the signification of "inland," as opposed to "maritime;" and this is the only sense in which the word is found in classical authors.

[5] *Origines*, xiii. 16, p. 181.

[6] His merits are repeatedly acknowledged by Gibbon.

of which he is relating the vicissitudes. We have already seen how much we are indebted to him for his account of the campaign of Julian against the Persians, of which he was not only the contemporary, but the eye-witness:[7] but besides this he takes occasion from time to time to give a general geographical sketch of the countries, which were the theatre of the wars that he is about to relate. He has indeed in some cases carried this practice to a very unnecessary extent. Thus before narrating the wars of Julian in Gaul, which were in fact confined to the defence of the German frontier, he proceeds to give a complete and tolerably detailed description of the whole of Gaul, with its division into provinces, its rivers and other natural features, and especially the passes by which it communicated with Italy, on occasion of which he gives a detailed account of the pass of the Cottian Alps (the Mont Genèvre) which has every appearance of being derived from personal observation.[8] Again in connection with the wars of Constantius in the East he gives a succinct but systematic account of the provinces of Syria and Cilicia;[9] and ushers in the last campaign of Julian by a general review of the provinces of the Persian Empire, and the geography of Asia from the Caspian to the Persian Gulf and the borders of Arabia.[1] Still more uncalled for is a diffuse description of the Euxine Sea and the surrounding regions, which he has introduced on occasion of Julian's progress through Constantinople to the East:[2] his real object being evidently to take the opportunity of relating the fables connected with the Argonauts, the Amazons, etc.

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[7] Besides this we learn from himself that Ammianus served under Ursicinus, one of the generals of Constantius, both in Gaul and in the East from A.D. 350 to 360: and that he was at Antioch in 371 under the reign of Valens. It was probably not till after the death of Valens in 378 that he settled at Rome and devoted himself to the composition of his history. This was comprised in 31 books, of which the first 13 are lost. Fortunately those which remain comprise the whole period with which Ammianus himself was contemporary.

[8] xv. 10. He calls it the "via media, et compendiaria magisque celebris:" and proceeds to notice other passes and give an account of the passage of Hannibal, which is however utterly confused and unintelligible.

[9] xiv. 8.

[1] xxiii. 6. [2] xxii. 8.

But we gladly excuse an error which is certainly on the right side, and we cannot but regret that the description which he had in like manner given of Britain in one of his earlier books should be lost to us.[3] It could hardly have failed to throw some light upon the obscure questions connected with the northern nations of the island, and how it came to pass that the Caledonians, who occupied those regions in the second, and apparently still in the third century,[4] had now disappeared and their place was taken by tribes whose names were previously unknown—the Picti, the Scotti, and the Attacotti.[5] It is singular also that he has omitted to give any similar introduction to the war of Theodosius in Mauretania;[6] a province with which his readers might naturally be assumed to be less familiar than with Thrace or Egypt, both of which he has described at considerable length.

§ 4. It must at the same time be admitted that the execution of these parts of the work of Ammianus is far from corresponding with the justness of their conception. The names that he enumerates are often selected almost at random, and do not follow any geographical order: while he occasionally falls into the same error as Pliny, by introducing into his lists of nations and tribes names long extinct or obsolete, associated with

[3] xxvii. 8, § 4. He had at the same time given a full account of the fluctuations of the Ocean, meaning doubtless the tides, though he strangely calls them "motus adolescentis et senescentis Oceani."

We learn from Ammianus that London, which he generally calls "Londinium," bore in his day the official title of Augusta (xxviii. 3, § 1). It is worth notice also that at this time Britain furnished large quantities of corn for the supply of the legions on the Rhine (xviii. 2, § 3).

[4] Dion Cassius, who was a contemporary of Severus, but did not write his history till after A.D. 220, appears to have known of no other tribes in the north of Britain than the Caledonians and the Mæatæ, who apparently occupied the southern part of Scotland (Dion. Cass. lxxvi. 11–13; and see above, p. 647).

[5] The Attacotti, who are termed by Ammianus (xxvii. 8, § 5) "bellicosa hominum natio," are not mentioned by any other historian or geographer, but we learn from the Notitia that they were employed by the Romans as auxiliaries in Gaul; and St. Jerome, who had seen them in this capacity, bears personal testimony to their ferocity, and even to their cannibal propensities (Hieronym. *adv. Jovin.* ii. p. 335). Gibbon, who cites this statement from Jerome, adds that he sees no reason to question his veracity (chap. xxv. note 117).

[6] xxix. c. 5. It would appear, however, from a notice in § 18, that he had given a general description of Africa in a previous part of his work, now lost.

those of races that had only recently appeared on the Roman frontiers. Thus we find him enumerating among the Scythian tribes adjoining the Palus Mæotis, the Iazyges, Roxolani, and Alani, all of them appellations of recent date, together with the Melanchlæni, Geloni, and Agathyrsi, who were known almost entirely from the earlier Greek geographers.[7] At other times his information is derived partly from Ptolemy and partly from Pliny, and presents a curious combination of the two. Thus his account of the Seres is taken almost literally from Pliny, but his notice of their possessing large and opulent cities, of which he mentions Sera, Asmira, Issedon, and Asparata, can only be derived from Ptolemy.[8] Throughout his geographical descriptions indeed he appears to have frequently availed himself of the more extensive information derived from the Alexandrian geographer: in which respect he presents a favourable contrast to most of the other Roman writers on geographical subjects.

But far more valuable than these episodes of a distinctly geographical character, are those in which Ammianus has given us descriptions of the manners and customs of the different nations that were at this time pressing upon the frontiers of the Roman Empire, with most of which he had himself become acquainted in the course of his military services. Among these may be particularly mentioned his account of the Huns and their neighbours the Alani, both of them at this time among the most formidable foes of Rome,[9] as well as his brief notices of the Sarmatians and Quadi,[1] and of the Saraceni, under which appellation he includes all the nomad tribes

[7] xxii. 8, § 31.

[8] xxiii. 6, §§ 66, 67. Pliny mentions no *cities* of the Seres, and had evidently no geographical information concerning their country at all.

[9] xxxi. 2. His passing notice in another passage, that the Alani were the same people as had been previously called Massagetæ, is certainly worthless in an ethnographical point of view.

[1] xvii. 12. His statement of the precise similarity of their manners and customs would seem to render it probable that the Quadi as well as the Sarmatians were a Slavonian race. On the other hand they are found at an earlier period constantly associated with the Marcomanni, who were certainly a German tribe (see Chapter XXX. p. 646). The Marcomanni are not mentioned by Ammianus.

of Arabs, or what we should call at the present day the Bedouins—a people, as he remarks, equally undesirable as friends or enemies.[2] The name, as he himself tells us, had only recently come to be employed in this wide sense, and corresponded to the Greek term Scenitæ, or "dwellers in tents."[3] Another national appellation which was at this time used in a much more extensive sense than was known to the earlier geographers, was that of the Blemmyes, a name which he applies to all the Nubians, or inhabitants of the valley of the Nile above the cataracts.[4] In the general onslaught of nations upon the Roman Empire even these rude and feeble barbarians had rendered themselves formidable to the neighbouring province of Egypt.

§ 5. It is singular that while the fourth century produced no geographical treatise in prose of the slightest merit, it is marked by more than one poem connected with that subject. Foremost among these we may place the work of AVIENUS,[5] entitled a Description of the World, which is however nothing more than a paraphrase, or free translation, of the Periegesis of Dionysius. The popularity of that work in the original language, and the love for abridgements and summary treatises which so strongly characterized the period, were evidently the

[2] xiv. 4. "Nec amici unquam nobis nec hostes optandi."

[3] xxii. 15, § 2. "Scenitas Arabas quos Saracenos nunc appellamus." The name is not found in Pliny, and only appears in Ptolemy (vi. 7, § 21) as that of a subordinate and local tribe; but it is frequently used by the writers of the Augustan history in the same manner as it is employed by Ammianus, especially during the wars of Aurelian in the East.

[4] xiv. 4, § 3; xxii. 15, § 24. The Blemmyes were known to Eratosthenes, and are mentioned by Strabo as one of the tribes on the Upper Nile; but they were at this time subject to the Ethiopians, and he treats them all as feeble and powerless nations (xvii. 1, pp. 786, 819). But under the Roman Empire we find them among the nations over which Aurelian and Probus did not disdain to triumph (Vopisc. *Aurelian*, 33; *Probus*, 19).

[5] His name at full, as given in the MSS. is Rufus Festus Avienus. Nothing is directly known concerning him, but there is little doubt that he is the same person who composed a poetical treatise on astronomy, bearing the same relation to the Phænomena of Aratus that his Periegesis does to that of Dionysius, and the author of this last work certainly flourished in the latter part of the fourth, or beginning of the fifth century (see the article AVIENUS in Dr. Smith's *Biogr. Dict.* vol. i.). The poems of Avienus are published by Wernsdorf in the 5th volume of his Poetæ Latini Minores; and his paraphrase of Dionysius is contained also in the editions of that work by Bernhardy and C. Müller.

motives that prompted him to the task. His work is not indeed a mere translation, for he has omitted some passages, while he has extended and amplified others, and occasionally inserted lines, and even short passages, to which there is nothing corresponding in the original. Most of these additions are however inserted obviously only for the sake of poetical ornament—as where, after noticing the destruction of the Nasamones by the Roman arms,[6] he proceeds to expatiate on the invincible character of those arms, which had been carried to the Danube and the Rhone, and had inflicted grievous losses on the "marsh-dwelling Germans." He very rarely attempts to introduce any of the increased geographical knowledge attainable in his day, or to correct any of the errors of his original author. One of the very few cases in which he has done this is in regard to the sources of the Rhine and the Danube, concerning which, as well as the Alps, Dionysius had but very imperfect notions. But his translator not only describes the Alps in general in two characteristic lines, but adds that it was in the midst of their rocks and cliffs "where the mist-clad Adulas supports the clouds on its summit," that the Rhine took its rise, and flowed from thence to the northern Ocean; while the Danube had its source in Mount Abnoba and held its course towards the east till it entered the Euxine by five mouths.[7]

§ 6. Here therefore we have a distinct case where the Latin poet has introduced two new names and two definite geographical facts, which, though familiar to the Romans in his day, had been unknown to the author whom he was following. It is unfortunately almost the only one. We have seen how

[6] vv. 305–312. Dionysius has only two lines on this subject, vv. 209, 210.

[7] It may be worth while to extract the lines concerning the Alps and the source of the Rhine as a specimen of the manner in which our author treats his subject.

Nec procul hinc rigidis insurgunt rupibus Alpes,
Nascentemque diem celso juga vertice cernunt.
Porro inter cautes et saxa sonantia Rhenus,
Vertice qua nubes nebulosus fulcit Adulas,
Urget aquas, glaucoque rapax rotat agmine molem
Gurgitis, Oceani donec borealis in undas
Effluat et celeri perrumpit marmora fluctu.
v. 433.

The name of Abnoba was doubtless derived from Pliny (iv. 12, § 79); but that of Adulas is not found in that author, though known to Strabo as well as Ptolemy.

vague and imperfect were the notions entertained by Dionysius concerning the western regions of Europe, and his translator has done almost nothing to throw light upon them.[8] The same remark applies to another version of the same Greek original, made in the sixth century by the celebrated grammarian PRISCIANUS, which differs materially in character from that of Avienus, but is equally devoid of geographical interest. This later version is in general much more closely translated than that of Avienus: it is in fact a translation and not a paraphrase: but the author has inserted from time to time brief notices of remarkable objects or curiosities in the countries described, taken for the most part from Solinus,[9] and like the greater part of that author's treatise, without any direct bearing upon geographical knowledge. The most interesting of these passages is one in which he speaks of some caves in the lofty mountains of Macedonia, in which the presence of oyster-shells was a clear proof of the extent of the universal deluge.[1]

§ 7. Another work of Avienus is in one respect of more value than his Descriptio Orbis Terræ, as it has some pretension to originality, though miserably defective in method and real insight into his subject. It would indeed be difficult to conceive anything more confused and confusing than the fragment which remains to us of this work. The author's object, as he tells us at the beginning, was to give to one Probus, to whom the poem is addressed, a clear notion of the

[8] See the lines immediately preceding those quoted in the preceding note; where Spain, Gaul, and Germany are disposed of in ten lines (vv. 414–424), followed by three concerning the fabulous Eridanus. Even concerning the British Islands he adds no information at all.

[9] Dr. C. Müller, with his usual diligence has pointed out all the passages thus intercalated by Priscian. (*Geogr. Græci Minores*, tom. ii. *Prolegomena*, p. XXX.)

[1] As this passage, from the mode of its occurrence has been overlooked by most writers on geology, I here insert it.

Locridis inde solum sequitur regionis et ora
Thessalis, et tellus Macetum cum mœnibus altis:
Sub cujus scopulis tangentes vertice cælum
Speluncæ veteris servant insignia cladis:
Finibus in mediis terrarum namque videntur
Ostrea muricibus siccata latentibus esse;
Diluvium latebras dederat quod piscibus illis.
vv. 432-438.

The fact of marine shells being found inland far from the sea had been noticed by various ancient writers; among others by Ovid (*Metamorph.* xv. 264), but this is, so far as I know, the first attempt to connect that phenomenon with an universal deluge.

Pontus Euxinus and the Palus Mæotis, with the adjoining regions, but the extant fragment, though extending to more than 700 lines, does not comprise any more than the tract from Gades to the Rhone and Massilia: while the first 400 lines are occupied with a description of the Ocean, west of the Columns of Hercules and Gades; or rather with a string of statements concerning it of the vaguest character, strung together without connection or method, and derived from the most heterogeneous sources. Avienus boasts in the introduction to his poem that he had consulted the works of Hecatæus, Hellanicus, Damastes, and Scylax of Caryanda, as well as Herodotus and Thucydides;[2] and it is remarkable that the greater part of his statements concerning the shores of the Ocean and the nations adjoining them are taken from these early writers, who were in reality, as we have seen, almost wholly unacquainted with this part of the world.[3] He however professes to have derived a considerable part of his information from a wholly different source—the voyage of the Carthaginian Himilco, who, as we learn from Pliny, was sent out to explore the western coasts of Europe at the same time that Hanno made his much better known voyage along that of Africa.[4] If we could depend upon Avienus having really consulted this authority in the original, or if the statements reported by him were more intelligible in themselves, these would be of the highest value. But unfortunately we have no assurance of Avienus having ever seen the actual work of Himilco[5] (no mention of which is found in any other writer)

[2] Besides these he refers to Phileas of Athens, Pausimachus of Samos, Bacorus of Rhodes, Euctemon of Athens, and Cleon of Sicily (vv. 42–50), all of them either otherwise wholly unknown or very nearly so. It is most unlikely that he had really consulted all these authors in the original.

[3] A remarkable instance of this is his repeated mention (vv. 201, 205, 223) of a people called Cynetes: a name found in Herodotus (iv. 49) as that of the most westerly nation of Europe, but unknown to all later geographers.

[4] Plin. *H. N.* ii. 67, § 169. His name figures also in the list of authorities cited by Pliny for his fifth book, but no reference is made to him in the work itself, and there can be little doubt that Pliny was acquainted with his voyage, like that of Hanno, only by vague report.

[5] Avienus indeed distinctly claims to have done so:

and his manner of rendering his authorities is such as leaves us in great doubt what was really stated by the author whom he professes to copy. Still his account is curious, and of considerable interest in its bearing on one of the most disputed questions in ancient geography.

§ 8. After describing the Columns of Hercules, Abyla and Calpe, he adds that there is another promontory called "by the ancients" Œstrymnis, a lofty and projecting headland, under which opens out the Œstrymnic Gulf, "in which arise the islands called Œstrymnides, scattered widely about, and rich in the metals tin and lead."[6] These he proceeds to describe as inhabited by a numerous and active population, with a great zeal for trade, and traversing the stormy seas of Ocean in their light vessels, which were not constructed like those of other nations of pine or other wood, but of skins joined together.[7] From thence at a distance of two days' sail lay the extensive island called the Sacred Island, which was inhabited by the nation of the Hibernians, and near that again expanded the island of Albion.[8] He adds, that it was the custom of the Tartessians (meaning clearly the people of Gades, which he elsewhere tells us was called Tartessus) to carry on trade with the Œstrymnides, and that the same thing

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Hæc olim Himilco Pœnus Oceano super
Spectasse semel et probasse retulit:
Hæc nos ab imis Punicorum annalibus
Prolata longo tempore, edidimus tibi.
vv. 412–415.

But no one, who is familiar with the character of these late Latin compilers, will be disposed to attach much value to such an assertion.

[6] He first describes the promontory in terms which would lead us to suppose that the Sacred Promontory (Cape St. Vincent) was the one meant, but, if any geographical meaning at all can be attached to the lines that follow,

Sub hujus autem prominentis vertice
Sinus dehiscit incolis Œstrymnicus,
In quo insulæ sese exserunt Œstrymnides,
Laxe jacentes, et metallo divites
Stanni atque plumbi.
Ora Marit. vv. 94–98.

the gulf which he calls the Sinus Œstrymnicus can be no other than the Bay of Biscay, and in that case the Œstrymnic Promontory must be Cape Finisterre.

[7] Ibid. vv. 101–107.

[8] Ast hinc duobus in Sacram (sic insulam
Dixere prisci) solibus cursus rati est,
Hæc inter undas multa cespitem jacet,
Eamque late gens Hibernorum colit.
Propinqua rursus insula Albionum patet.
Ib. vv. 108–112.

Avienus is the only ancient author who gives the name of "the Sacred Island" to Ireland—an appellation which is supposed by Dr. Latham to have arisen from a confusion of the Greek ἱερὰ with the native name Eri (Art. *Ierne* in Smith's *Dict. of Ancient Geogr.*). But this suggestion appears to me very far-fetched and improbable.

was done by the Carthaginian colonists, and by the people who dwelt between the Columns of Hercules. But Himilco the Carthaginian reported as the result of his own experience that the passage could with difficulty be accomplished in four months, such was the absence of wind and the sluggishness of the sea; besides which he added that there were vast quantities of sea-weed which hampered a ship in her course like brushwood, and monsters of the deep swam to and fro among the ships as they were creeping on their languid course.[9]

This account of the dangers of the voyage seems strangely at variance with the statement immediately preceding, that it was habitually made by the traders from Gades and other ports in the south of Spain, and certainly has very much the air of intentional exaggeration or misrepresentation. The want of wind and the sluggish character of the sea are certainly not the difficulties that one would expect to hear of in the Bay of Biscay. But after making allowance for this, as well as for the very imperfect manner in which the information is reported to us, it seems certain that the account which we find in Avienus is derived from a different source from any other we possess, and may therefore be really of Carthaginian origin.

In the first place the name of Œstrymnides, by which he designates the islands generally known only as the Cassiterides or Tin Islands, is not found in any other author, and appears to have been unknown to the Greeks. Moreover he mentions in connexion with the inhabitants of these islands their boats made of hides, a custom noticed by many other writers in relation to the people of Britain, with which, as we have repeatedly had occasion to observe, they did not connect the Cassiterides. His statement of their being bold navigators, and carrying on trade on their own account, is not in itself improbable: while his account of the trade with these islands being carried on from Gades and the south of Spain, is entirely

[9] See Note A, p. 703.

in accordance with all we know concerning it at an early period.

The passages of Avienus which have just been discussed are really all that is to be found in the extant portion of his work of any kind of value or interest; even the description of the shores of the Mediterranean being scarcely more connected or methodical than that of the Atlantic. In the introduction he professes to have chiefly followed the authority of Sallust in regard to the countries around the Pontus and Palus Mæotis, which were the special object of his work. The historian had probably given an outline of their geography in his history of the Mithridatic Wars, as he had done of that of Africa in his Jugurtha; but it is unlikely that he had entered into a detailed description of them; nor, if he had done so, is it probable that Avienus would have transmitted it to us in any intelligible form.

§ 9. Two other poems of the declining literature of Rome deserve a passing notice in this place, inasmuch as their subjects partake in some degree of a geographical character. The first of these is the 'Mosella' of AUSONIUS, a writer of the fourth century,[1] in which the author has given us an elaborate, and in many cases really poetical, picture of that river and its banks, which he describes as clothed with vineyards from the water's edge to the summit of the hills that bounded them. It is more surprising to find him describing the villas that lined its shores in terms that represent them as rivalling those of Baiæ.[2] The picture is however but a general one, and no notice is taken of any towns by which the river flowed.[3] The only geographical details are supplied in a list of the various affluents or tributaries of the Moselle, most of which are very

[1] Ausonius was a native of Burdigala (Bordeaux) in Gaul, and was born near the beginning of the fourth century; but survived almost to its close. His poem on the Moselle was written in the year 368.

[2] It must be remembered, however, that Treves was at this time a favourite residence of the Roman emperors; among others of Valentinian and Gratian, under whom he wrote.

[3] This, it appears, he reserved for another poem, which was doubtless never written. See v. 454.

small streams and their names are otherwise unknown; but it is interesting to find that they can be identified without difficulty from their being preserved with but little change to the present day.[4] Towards the end of his poem also, in instituting a comparison between the Moselle and the other rivers of Gaul, Ausonius mentions not less than five names of these last which are not found in any geographical writer, but can be readily identified for the same reason. These are the Carantonus (Charente), the Duranius (Dordogne), the Tarnis (Tarn), the Aturrus (Adour), and the Druma (Drome).[5] So imperfect is, after all, the knowledge we possess from ancient writers of the geography even of a country like Gaul, which had been so long one of the most civilized provinces of the Roman Empire.

The same author has left us another poem, which may be considered as in some degree connected with geography—the "Ordo Nobilium Urbium," containing brief notices of seven of the chief cities of the Roman Empire, which he enumerates in the following order: 1, Rome; 2, Constantinople; 3, Carthage, which was at this period scarcely inferior to Constantinople; 4, Antioch; 5, Alexandria; 6, Treveri; 7, Mediolanum; 8, Capua; 9, Aquileia; 10, Arelas; 11, Emerita; 12, Athens; 13, Catana; 14, Syracuse; 15, Tolosa; 16, Narbo; 17, Burdigala. It is evident that the selection is in great measure arbitrary, and that the poet has given a very undue importance to the cities of his native country Gaul, while he has entirely ignored (with the exception of Alexandria and Antioch) all the great cities of the East, which were undoubtedly at this period among the most populous and flourishing of the Empire.

§ 10. The other poem alluded to above is that of RUTILIUS (or as his name is given at full, Claudius Rutilius Namatianus),

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[4] Thus the Sura is still called the Sur or Sauer, the Saravo the Saar, the Gelbis or Kelbis the Kyll, the Erubrus the Rover, the Lesura the Leser, the Drahonus the Drone, the Salmo the Salm (vv. 360–370).

[5] vv. 461–481.

like Ausonius a native of Gaul, who visited Rome in A.D. 416, only six years after its capture by the Goths under Alaric, and described his return voyage to Gaul in a poem in elegiac verse in two books, which possesses considerable poetical merit for the time when it was written. Unfortunately the greater part of the second book is lost; and the extant portion goes no farther than Luna—but in any case a coasting voyage along the shores of Etruria and Liguria could have added but little to our geographical knowledge. The author, who was a man of consular rank, had chosen this mode of travelling on account of the insecurity of the route by land after the invasion of the Goths. He has however furnished some topographical details of interest, especially with regard to Pisa and its port; and has given a graphic, as well as accurate description of the port of Centumcellæ (Civita Vecchia),[6] and of the remarkable headland of the Mons Argentarius, which, singularly enough, is not mentioned by any earlier writer.[7] He is also the only Latin writer who describes the islands of Igilium, Ilva, Capraria and Gorgona, of which (except Ilva) the names only are found in Pliny.

§ 11. Almost exactly contemporary with the poem of Rutilius is the well-known historical work of OROSIUS.[8] In this the author has prefixed to his abridgement of the history of Greece and Rome a summary view of the geography of the known world, which is drawn up with clearness and intelligence, and has the merit of being original: at least it is not taken, like most other similar abridgements, either from Pliny or Ptolemy. It is probably derived for the most part from earlier authorities.[9] Thus we find the author describing the

[6] i. vv. 237–248.

[7] i. vv. 315–324.

[8] The history of Orosius, as is well known, was drawn up within a few years after the capture of Rome by the Goths (A.D. 410), at the suggestion of St. Augustine, with the express purpose of showing that calamities equal to those which had recently befallen the Roman Empire were recorded in all previous ages, and could not therefore be justly ascribed to the introduction of Christianity. Hence his work is entitled *Historia adversus Paganos*. The author was a native of Spain, but spent much time in the East, in company with St. Jerome.

[9] At the same time the phraseology and nomenclature are certainly his own. Thus he repeatedly uses the term Mare

mouths of the Ganges as situated in the midst of the eastern front of Asia, and though he gives the name of Sericus to the Ocean towards the north-east, he has no definite notice either of the Seres or their country. In common with all other Latin writers he regards the Caspian as communicating with the Northern Ocean. In regard to the Nile he has a strange theory, not found in any earlier writer, of its taking its rise near the mouth of the Red Sea and the emporium of Mossylon,[1] and flowing from thence to the west as far as the island of Meroë. Another statement, not found elsewhere, occurs in his description of the British Islands, where, after treating of Hibernia, which he describes as inhabited by the Scoti, and surpassing Britain both in climate and fertility, he adds that there was another island near it, called Mevania, of no small extent and a fertile soil, which was equally inhabited by Scottish tribes.[2] There can be little doubt that the island thus designated is the Isle of Man, but he appears to have had a strangely exaggerated idea of its size and importance.[3]

§ 12. The same epitome as is given by Orosius is found also incorporated in a little work of a very anomalous character ascribed to JULIUS ÆTHICUS, a writer of whom nothing is known, any more than of a certain JULIUS HONORIUS,[4] under whose name a very similar fragment is extant. The relation between the two is extremely obscure, though the resemblance between them is so close that it is certain either that the one copied the other, or that they both derived their materials

Magnum for the Mediterranean; and he is the first author who employs the term Asia Minor in its modern sense (i. 2, p. 16).

[1] It seems probable that this strange idea arose from a confusion between the *names* of Mossylon and the Massyli or Masssesyli, where Juba, as reported by Pliny, supposed the Nile to rise for the second time (Plin. v. 9, § 52). In Solinus we find the promontory of Mossylon converted into Massylicum promontorium (c. 56).

[2] "Huic (Hiberniæ) etiam Mevania insula proxima est, et ipsa spatio non parva solo commoda, æque a Scotorum gentibus habitatur" (i. 2, p. 28).

[3] The name must be a corruption of the Monapia of Pliny (iv. 16, § 103), which was probably also written Menapia. But the form Mevania is used by Bede (*Hist. Eccl.* ii. 5), who doubtless derived it from Orosius.

[4] Julius Honorius is indeed mentioned by Cassiodorus (*de Inst. Divin. Script.* c. 25), who apparently refers to the very work we have, which he styles "libellus Julii Oratoris," but he throws no light upon its author.

from the same source.[5] Both are alike utterly worthless in a geographical point of view, so far as the portions common to the two are concerned. These consist almost entirely of names, the lists of which are arranged on no intelligible principle, while many of them are obviously corrupt, and of an attempt to describe the courses of rivers, which in many instances betrays the most marvellous ignorance.[6] But to this strange catalogue is annexed, in the treatise which bears the name of Æthicus, the description of the world (Descriptio totius Orbis) which has been already referred to as identical with that found in Orosius. It contains moreover a brief introduction, or preface, in which the author introduces the statement, already noticed in a former chapter, of the measurement of the Roman world by order of Julius Cæsar; a task which was commenced, as he tells us, in the consulship of Cæsar and M. Antonius (B.C. 44), the very year of Cæsar's death, and occupied not less than thirty-two years.[7] It is extremely difficult to judge what value can be ascribed to a statement of this kind, found for the first time in such a miserable compilation as that of the supposed Æthicus, and which is not noticed by any former writer. At the same time it is given in such circumstantial form as renders it probable that it must have had some foundation; and perhaps the most plausible explanation is, that it was originally connected with the measurement of the Roman roads throughout the Empire, which must have formed the foundation of such a map as that of Agrippa. Indeed, as we have already seen, the author of that great work did not hesitate to give estimates of distances, even where he could not possibly possess any authentic information, still less anything like measurements.[8]

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[5] See Note B, p. 703.

[6] Among these is however found an account of the "king of rivers," "the beautiful Tiber," of its course through Rome, and its mouth at Ostia, with the island formed by its two branches, which presents a singular contrast with the utterly jejune character of the rest of his work. On the other hand no mention occurs even of the name of the Eridanus or Padus, to which the epithet of "fluviorum rex" is ascribed with so much more reason by Virgil.

[7] See Note C, p. 706.

[8] See Chapter XX. p. 177.

§ 13. It is certain indeed that throughout the period of the Roman empire one important source of information was at the command of the geographers, had they known how to make use of it, which was almost wholly wanting to the earlier Greek writers. This was found in the Itineraries, which served to record the distances along the high roads that had been carried through all the provinces of the empire, and had the inestimable advantage that these distances were really measured and marked with milestones, not merely vague estimates or calculations, like the greater part of those that had been at the command of the Greeks. The especial value of this source of information had been early pointed out by Polybius, and is recognized also by Strabo:[9] it was without question the main foundation also of the map of Agrippa just referred to; and there can be no doubt that from the time of Augustus onwards manuals or tables of such Itineraries would be collected and preserved for general use. Those however which are still extant belong to a much later period. By far the most important of these is that bearing the name of the ITINERARY of ANTONINUS, which contains a series of routes through all the provinces of the empire. It is evident from its name[1] that this was originally compiled under the reign of one of the emperors who bore the name of Antoninus, most probably of the one commonly known in history as Caracalla; but it has obviously undergone continual revision and correction at subsequent periods, and in its present form may be ascribed with reasonable certainty to the reign of Diocletian.[2]

[9] Polyb. iii. 39; xxxiv. 12; Strabo, vii. p. 322. See Chapter XXI. p. 265.

[1] It is called in the extant MSS. "Itinerarium Provinciarum Antonini Augusti."

[2] See this subject fully discussed by Wesseling in the preface to his valuable edition of the Itineraries (*Itineraria Veterum Romanorum*, 4to. Amstel. and more briefly by Parthey in his recent edition of the same (8vo. Berolin. 1848).

The most conclusive proof as to its date is that while Byzantium is inserted under that name (the words "qui et Constantinopolis" being the addition of a later hand), it is not thought worthy even to be made one of the principal stations or resting-places, the route being carried on and the distance reckoned at once from Sirmium to Nicomedia (p. 124), at that time the residence of the emperor Diocletian. Nor are any of the other numerous

It is scarcely necessary to point out that, valuable as is such a collection of routes and distances, it furnishes us only with materials for geography, not with any geographical system. Taken alone indeed it could hardly supply the merest skeleton of such a system, not only from the uniform want of any indication of the bearings, and frequently even of deviations from the course of the main roads, but from the absence of any fixed positions, known by astronomical observations, as the starting-points and terminations of the several routes. Still the advantage of such means of correcting or confirming the existing maps—based as these were upon the most imperfect materials—was incalculable, and there can be no doubt that a large part of Ptolemy's positions were in fact derived from such sources, though disguised by the form in which he has presented them to us.[3]

It would be wholly foreign to the purpose of the present work to enter into any discussion of the details of these Itineraries. It must suffice to mention that they are confined strictly within the limits of the Roman Empire, and therefore assist us in determining its boundaries at the period when our manual was compiled. Thus in Mauretania we find no town on the western coast beyond Sala, though there was a mere outpost (exploratio), termed Mercurius, 16 miles farther south.[4] Towards the north the wall of Hadrian and Severus was the limit in Britain, with the exception of an outlying station called Bremenium, 20 miles to the north of it.[5] In Gaul we find the Rhine forming the absolute limit towards

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places named after Constantine and his successors inserted under those names, while Diocletianopolis and Maximianopolis in Thrace already appear under their new appellations.

[3] It is curious to find D'Anville, in the last century, still compelled to make use to a great extent of the same authorities, in order to construct his map of Italy, for want of more recent materials of a trustworthy character (See his *Analyse Géographique de l'Italie*, 4to. Paris, 1744).

[4] P. 3, Wess.

[5] Bremenium can be identified with certainty with a place called High Rochester from which a Roman road may be distinctly traced, communicating with the line of the Vallum. This road, called the Watling Street, was continued across the Scottish border. (See Bruce's *Roman Wall*, p. 300.)

the east, as did the Danube towards the north, throughout its whole course, from Guntia (Günzburg) a little below Ulm, to Noviodunum within a few miles of its mouth.[6] On the eastern frontier we have lines of route from Trapezus by Satala and Melitene to Samosata on the Euphrates and thence across that river to Edessa and Carræ, and back to Hierapolis: showing clearly that at the time when these itineraries were composed, a part at least of Mesopotamia was included in the Roman dominions.[7] On the side of Egypt the farthest limit was an outpost called Hiera Sycaminos, 8 miles above Pselcis (Dakkah), in the valley of the Nile; while a line of route is given across the desert from Coptos to Berenice on the Red Sea, which shows that that port retained its importance as an emporium of trade with Arabia and India.[8]

§ 14. The other itinerary usually published with that which bears the name of Antoninus—the ITINERARIUM HIEROSOLYMITANUM or Jerusalem Itinerary—is, as its name indicates, of a wholly different character, and presents merely a single line of route from Burdigala (Bordeaux) through Milan, Aquileia and Constantinople to Jerusalem, with a different return route from Constantinople by Brundisium and Rome to Milan. It was evidently written by a Christian pilgrim for the use and guidance of other pilgrims, and contains a detailed description of the holy places and sacred objects exhibited; which is of considerable interest in regard to the topography of Jerusalem. In other respects it is only of value for the comparison of the numbers given with those found in the

[6] Noviodunum probably occupied a site near the modern Tultcha, but all identifications in this delta of the Danube are very uncertain.

The omission of all routes north of the Danube is remarkable, and tends to show that our Itinerary must have undergone material corrections and compilations since it was first compiled. Such a manual, in the days of Caracalla, could not have failed to contain some lines of route in the Roman province of Dacia.

[7] On the other hand the strong fortress of Nisibis is not mentioned; hence we may fairly conclude that it was at this time in the hands of the Persians.

[8] It is curious to compare this Itinerary with the details of the same route given by Pliny (*H. N.* vi. 23, § 102). The sum total of 258 Roman miles is the same in both; but all the stations or watering-places (hydreumata) appear to have been changed, except two.

itineraries of Antoninus. In this instance we have the advantage of knowing with certainty that the itinerary was written down in the year 333.[9]

§ 15. Another document of a similar character, and next to the itinerary of Antoninus in value, is that commonly known as the TABULA PEUTINGERIANA, from the circumstance of the only existing MS. copy having been discovered by Conrad Peutinger of Augsburg.[1] It contains an extensive series of routes, not merely giving tables of distances, but exhibiting the routes themselves, laid down in lines as if on a map, but without any attempt at real geographical construction or arrangement. The whole world therein comprised—extending from Britain, of which only one angle is seen,[2] to the mouths of the Ganges in the Eastern Ocean—is represented in a very elongated form, drawn out like a broad ribbon, so that all the countries included are enormously distorted, being greatly exaggerated in length from west to east, and equally curtailed in breadth. It would however be a great mistake to imagine this distortion to be the result of ignorance on the part of the author of the Tabula: it is evident that this has no pretensions to be a true geographical map of the countries represented, and that the form is merely adopted as a convenient mode of exhibiting to the eye the principal lines of route, and the branches that diverged from them. Such an arrangement had an obvious tendency to mislead an uninstructed reader: but at the same time it must be admitted that it would save him considerable pains and trouble, as compared with an itinerary which merely gave him the distances from station to station

[9] This we learn from the writer himself (p. 571), who tells us that he travelled (ambulavit) from Chalcedon to Jerusalem and back to Constantinople in the consulship of Dalmatius and Zenophilus. The only existing MS. is of the ninth century, and the corrupt orthography of many of the names is probably owing in great measure to the copyist.

[1] It is now in the library at Vienna, and has been repeatedly published. The first complete edition was by Scheyb, in 1753; republished with corrections and an introduction by Mannert (fol. Lips. 1824).

[2] This is obviously the result of the western end of the chart being deficient. The whole of Spain is in like manner wanting, together with the western angle of Mauretania.

arranged in a tabular form. It would appear indeed that itineraries of a somewhat similar form were not uncommon among the Romans under the Empire. Vegetius, who wrote in the fourth century, after speaking of the duty of a general in command of an army to have detailed itineraries of all the routes in the country in which he was to carry on his operations, with full particulars concerning them, adds that some even went so far as to have them "not merely written down but painted," so as to exhibit them at once to the eye.[3] It must be added that the Tabula differs from the mere itineraries, and approximates to the character of a map, inasmuch as it exhibits, though in a rude way, the chains of mountains and the courses of the principal rivers, even where these have no direct connection with the routes delineated.[4] Imperfect as is the document in question, it is valuable for comparison with the other itineraries, as being certainly an independent compilation, so that the same errors and corruptions are not likely to be common to the two.

§ 16. Another document of the highest value in respect to the internal arrangements and administration of the Roman Empire—the NOTITIA DIGNITATUM—requires also a passing notice in this place, though it can hardly be said to contribute anything to geographical knowledge in the true sense of the word. But it contains a review of the provinces of the empire, as they existed at the time when it was drawn up, after the subdivision of them which had taken place under Diocletian and Constantine, of the details of which we have no informa-

[3] "Primum itineraria omnium regionum in quibus bellum geritur plenissime debet habere perscripta; ita ut locorum intervalla, non solum passuum numero, sed etiam viarum qualitates perdiscat; compendia, diverticula, montes, flumina, ad fidem descripta, consideret; usque adeo ut sollertiores duces itinera provinciarum in quibus necessitas gerebatur, non tantum adnotata, sed etiam picta, habuisse firmentur; ut non solum consilio mentis, sed aspectu oculorum, viam profecturi eligerent." Vegetius *de Re Militari*, iii. 6.

[4] The existing copy was made by a monk of Colmar in 1265; and probably the corruptions of the names, which appear for the most part in very barbarous and distorted forms, proceed to a great extent from the carelessness and ignorance of this transcriber. The original from which it was derived is assigned by Mannert to the third century.

tion from other sources. Unfortunately this is not given in such a form as to define their boundaries, of which we are therefore left in ignorance, unless able to supply the deficiency from other sources:[5] and though numerous stations of troops are mentioned, in all the frontier provinces, these are inserted without any indication of their geographical position or relations, and we are left wholly without any means of identifying them, except when they are found also in the Itineraries. It may therefore be fairly said that we derive no geographical, or even topographical, information from this source, except where we could do without it. Almost the only exception occurs in the description of Britain, where the stations of the military force along the line of the Wall are given in order, from east to west, beginning from Segedunum (Wallsend) and proceeding westwards, and from the comparatively perfect state of the remains, they can be identified with little difficulty along the greater part of the line.[6] But even here as one proceeds westward it becomes impossible to recognize the sites, and the fact that so important a town as Luguvallium (Carlisle) is not mentioned, though situated almost close to the wall, sufficiently shows that the places enumerated are mere military posts or forts. This is probably the

[5] A good instance of this is supplied by the case of Britain, which, as we learn from the Notitia, was at this time divided into five provinces: Maxima Cæsariensis, Valentia, Britannia Prima, Britannia Secunda, and Flavia Cæsariensis (*Notit. Occid.* c. 22). But, as has been already observed, we do *not* know the distribution and boundaries of these provinces, though they are often given. They are in fact found in all the modern maps of Roman Britain. Valentia, as we learn from Ammianus (xxviii. 3, § 7), was the province newly acquired by Theodosius, and must probably have been situated north of the Wall of Hadrian; but the others are uncertain, and the limits assigned them on our ordinary maps are wholly conjectural. Their *names* are also found in the brief review of the Roman provinces by Sextus Rufus, who wrote under Valens, but in a manner that conveys no further information (Sex. Ruf. *Epit.* c. 6).

[6] They are here enumerated as "per lineam Valli," and may therefore be fairly assumed to be given in the order of sequence (*Notit. Occident.* c. 38). On the other hand the list (in c. 25) of the Roman forts along the "Littus Saxonicum per Britanniam" is certainly *not* given in any geographical order. Here we find Dubris (Dover) and Lemannus (Lymne), followed by Branodunum (Brancaster) and Garianonum (Burgh Castle), both in Norfolk, after which again come Regulbium (Reculver), and Rutupis (Richborough) in Kent. Here all the names can be identified upon reasonable grounds; were it otherwise the irregularity of their occurrence would wholly baffle conjecture.

case elsewhere, and serves in great measure to account for the fact that so large a proportion of the names found in the Notitia cannot be recognized either in Ptolemy or the Itineraries.

§ 17. It remains only to notice two other works, which, though in point of date they belong to mediæval, rather than to ancient, geography, are so closely connected with some of those which we have been last considering, that they deserve a passing mention, before we close the list of the wretched compilations that served to keep alive some trace of geographical knowledge at the close of the Roman Empire. One of these is the composition of a monk of Ravenna, apparently in the seventh century,[7] and contains an introduction to the cosmography and geography of the world: but is in fact occupied almost wholly with long lists of names, which the compiler professes to have derived from the works of previous "philosophers," many of whom he cites by name;[8] but even a cursory examination is sufficient to show that they are in fact taken from a map or tabular itinerary, analogous to, but not identical with, the existing Tabula Peutingeriana.[9] The only interest of this little work consists in the comparison of the names here given with those found in the Tabula, both being often equally corrupt, but apparently not derived the one from the other. It is however so obviously based upon

[7] This tract is commonly cited as the "Anonymous Geographer of Ravenna." It was published by Gronovius in the Appendix to his edition of Pomponius Mela (8vo. Lugd. Bat. 1722), and has been recently published for the first time in a critical form by MM. Parthey and Pinder (8vo. Berolin. 1860).

[8] Among these are found the well-known names of Orosius and Jordanes (or Jornandes); but one of the authorities whom he cites the most frequently is one Castorius, of whom nothing is known from any other source. His lists of the cities of Asia especially are expressly stated to be derived from this authority. He professes, however, to have also consulted some "Gothic" writers; and it was doubtless from this source that he derived such territorial names as "Francia" and Burgundia, and the name of the Dani, whom he repeatedly associates with the Saxones.

[9] Thus we find him not only always following in his enumeration the lines given in the Tabula or other itineraries, but including in his list of the "civitates" of Italy and Gaul such mere stations or "mutationes" (as they are correctly termed in the Jerusalem Itinerary), as "Taberna frigida," "Ad novas," "In Alpe Maritima," &c. For the routes leading direct from Rome, such as the Via Salaria, Via Aurelia, &c., he himself tells us that this was the method he followed.

some earlier authority of this description as to belong to the same class with the Itineraries and other works on ancient geography; and has hardly any connection with that of the middle ages.

§ 18. The other work above referred to is of still later date, being the composition of an Irish monk of the name of Dicuil, and dating, as its recent editor has shown, from the early part of the ninth century, probably about 825.[1] It is, as might be expected, based almost entirely upon previously existing authorities, especially Pliny and Solinus, and as the passages cited from these authors are always copied *verbatim*, it is not without value for the correction of their text.[2] At the same time he introduces passages from other authors, also verbally extracted: especially from the Periegesis of Priscianus and a Cosmographia which is evidently the same as that still extant under the name of Julius Æthicus.[3] But besides these sources he professes to give us the results of a measurement of the whole world, made by order of the emperor Theodosius II. (who reigned from A.D. 408 to 450) and which he compares in regard to each country with the numbers given by Pliny. This appears to have been indeed the principal object of his little treatise, which he entitles "De Mensura Orbis Terræ:" and to which he appended the extracts from Solinus and other authors in the nature of notes. In one instance only does he give us independent information of his own, and supplies a curious and interesting notice. After citing from Solinus his brief description of Thule, Dicuil adds that "thirty years before, he had heard from certain clerks (probably monks like himself), who had resided in the island from the Calends of February to those of August, that not only at the summer solstice, but for some days at that period,

[1] The little work in question was first published by M. Walckenaer in 1807, and again by M. Letronne in 1814, with a valuable introductory dissertation and commentary. The text has also been more recently reprinted by M. Parthey (Berlin, 1870).

[2] See the remarks of M. Mommsen in the preface to his edition of Solinus, p. 79.

[3] See the preface by Parthey, p. 10.

in the evening when the sun sets, it seems as it were to hide itself behind a little hill: so that there is no darkness even during this short time, and people can follow their ordinary occupations as if the sun were shining. They added that if they had been on the summit of a mountain perhaps the sun would never have been hidden from them."[4] This description so precisely agrees with the phenomena that would be really observed in a place just without the Arctic Circle, as to leave no reasonable doubt of its authenticity, and that the island visited by the monks was in this instance really Iceland. The probability of this is confirmed by another passage immediately following, which may with equal assurance be referred to the Faroe Islands.[5] There seems no doubt therefore that in this case the adventurous monks had extended the boundaries of geographical knowledge beyond the farthest limit it had attained under either the Greeks or Romans.

[4] Dicuil *de Mensura Orbis*, c. 7, § 2, p. 38 of Letronne's edition. The illustration he gives of the degree of light that remained during the absence of the sun, is singularly naïve. "Ita ut nihil tenebrarum in minimo spatio ipso fiat; sed quicquid homo operari voluerit, *vel pediculos de camisia abstrahere*, tanquam in præsentia solis potest."

[5] They are described as "a group of small islands, separated by narrow straits, which could be reached from the northern islands of Britain in a voyage of two days and two nights, with full sails and a favouring wind. Ibid. § 3. This statement clearly excludes the idea that the Shetlands could be meant.

NOTE A, p. 688.

VOYAGE OF HIMILCO.

THIS passage has attracted so much attention that it is desirable to quote it at full. After the mention of Ireland and Albion, the author adds:

Tartessiisque in terminos Œstrymnidum
Negotiandi mos erat: Carthaginis
Etiam coloni, et vulgus inter Herculis
Agitans columnas hæc adibant æquora:
Quæ Himilco Pœnus mensibus vix quatuor,
Ut ipse semet re probasse rettulit
Enavigantem, posse transmitti adserit.
Sic nulla late flabra propellunt ratem,
Sic segnis humor æquoris pigri stupet.
Adjicit et illud, plurimum inter gurgites
Extare fucum, et sæpe virgulti vice
Retinere puppim: dicit hic nihilominus
Non in profundum terga demitti maris,
Parvoque aquarum vix supertexi solum:
Obire semper huc et huc ponti feras,
Navigia lenta et languide repentia
Internatare belluas.

vv. 113–129.

The notion of the quantities of sea-weed has led some writers (including Dr. Latham in the article BRITANNICÆ INSULÆ in Dr. Smith's *Dict. of Geography*) to suppose that the sea of Sargasso was meant, and even that there was "a confusion of attributes" between the Scilly Islands and the Azores! But all the other statements are utterly opposed to the supposition of a voyage in the open ocean: and again in a second passage (see 402–412) where he repeats the same account, he dwells especially upon the shallowness of the sea. Had we possessed the narrative of Himilco in an authentic form, we should probably have been able, as in the case of Hanno, to arrive at a reasonable conclusion as to what he actually saw and described: but it is idle to examine closely the language of such a writer as Avienus.

NOTE B, p. 693.

THE COSMOGRAPHY OF ÆTHICUS.

By a strange coincidence these wretched compilations, which had remained almost unnoticed since they were inserted by Gronovius

as an Appendix to his edition of Pomponius Mela in 1722, have been made the subject in very recent times of an amount of literary discussion and investigation far beyond their merits. (The complicated literary questions connected with their origin, date, and authorship have been subjected to an elaborate investigation: first, by M. D'Avezac in his work entitled *Ethicus et les Ouvrages Cosmographiques intitulés de ce nom.*, 4to., Paris, 1852; next by Dr. K. Pertz, *De Cosmographia Ethici Libri tres*, 8vo., Berolin. 1853, and lastly by M. H. Wuttke, *Cosmographia Aethici Istrici ab Hieronymo ex Græco in Latinum breviarium redacta*, 8vo., Lipsiæ, 1854.) The result appears to be that the treatise, if such it can be called, ascribed to Julius Honorius, is the older of the two; and that bearing the name of Æthicus is copied from it, but with additions from other sources. Considered from a geographical point of view they are wholly without value, and their only interest arises from their having been (as appears from the vast number of MSS. of them still extant) a popular source of instruction during the middle ages. It would seem that the dry lists of names which they contain were intended to accompany a globe, or map of the world, and to be used by teachers or lecturers in expounding its contents to their audience. But in their present state they are not only hopelessly corrupt, but many of the names altogether unknown, and those that can be recognized jumbled together in the most hopeless confusion. The arrangement, or attempt at arrangement, is wholly different from anything that we find in earlier authors, and curiously enough, is wholly independent of the customary division into the three continents of Europe, Asia, and Africa. The author in each case begins with assuming a division of the ocean into four parts, and then describes each of these parts as having certain seas dependent upon or included in it. Thus the Western Ocean contains the Sea of Gades, the Sea of the Orcades, the Sea of Thyle, the Britannic Sea, the Tyrrhenian Sea, and the Adriatic; while, strange to say, the Mæotis, Bosphorus, Pontus, Propontis, Hellespont, Ægean and Ionian Seas, as well as the Caspian, are included in the dependencies of the Northern Ocean! Then follows in each case a list of the islands, mountains, provinces, and chief towns of the regions adjacent to these divisions, but without any attempt to arrange them in geographical order, or even to distribute the cities according to the countries to which they belong. It would be difficult indeed to convey to any one that

has not seen the original, an idea of the utter confusion into which the whole subject is thrown.

It is difficult to believe that the work of Julius Honorius, which is mentioned with commendation by such a writer as Cassiodorus (l. c.) can have been the meagre and miserable abridgement which we possess under that name: the more so as he appears to recommend it for purposes of instruction together with a map of Dionysius (pinacem Dionysii) with which, if Dionysius Periegetes is meant, it could have nothing in common. Whatever may be the date of the original work, it appears to me impossible that the extant abridgements can be older than the sixth or seventh century.

Wholly distinct from the preceding, though often confounded with it, is a strange composition published for the first time by M. D'Avezac, and again by Wuttke, under the title of "Cosmographia Aethici Istrici," which professes to have been translated by a certain "Hieronymus Presbyter" from a Greek original. It is written in extremely barbarous Latin, and its contents are for the most part utterly absurd; but its geographical statements, if such they can be called, would seem clearly to refer it to a period not earlier than the seventh century. How M. Wuttke can attach any value to such a production, and believe in the alleged *travels* of the supposed philosopher Aethicus (including a voyage to Thule, a visit to the Gryphæ on the Northern Ocean, and a journey to the Ganges in quest of Noah's Ark!), is to me quite incomprehensible; still more that he should ascribe the translation by "the Presbyter Hieronymus" to the great ecclesiastical writer of that name. If there ever was any Greek original, which may well be doubted, it would seem to have been a fictitious account of the alleged travels of a philosopher (something like those of Apollonius of Tyana, but adapted to Christian times) from which the existing abstract was derived by an extremely ignorant and illiterate monk. But the prominent position given to the Turks (Turchi) in Asia, which could hardly be due to the translator or epitomizer, is alone sufficient to assign it to a very late date. Such as it is, however, it appears to have been much read in the middle ages, and is therefore not without *literary* interest.

NOTE C, p. 693.

MEASUREMENT OF ROMAN EMPIRE.

"Itaque Julius Cæsar, bissextilis rationis inventor, divinis humanisque rebus singulariter instructus, cum consulatus sui fasces erigeret, senatus consulto censuit omnem orbem jam Romani nominis admetiri per prudentissimos viros et omni philosophiæ munere decoratos. Ergo a Julio Cæsare et M. Antonio Coss. orbis terrarum metiri cœpit, id est, a consulatu suprascripti usque ad consulatum Augusti tertium et Crassi annis xxi mensibus v diebus ix Zenodoxo omnis oriens dimensus est, sicut inferius demonstratur. A consulatu item Julii Cæsaris et M. Antonii usque in consulatum Augusti decimum annis xxix mensibus viii diebus x a Theodoto septentrionalis pars dimensa, ut evidenter ostenditur. A consulatu similiter J. Cæsaris usque in consulatum Saturni et Cinnæ a Polyclito meridiana pars dimensa est, annis xxxii mense i diebus x sicut definita monstratur. Ac sic omnis orbis terræ intra annos xxxii a dimensoribus peragratus est, et de omni ejus continentia perlatum est ad Senatum."

I have given this passage at length, because its circumstantial and detailed character is such as not only to exclude altogether the supposition that it is the composition of the author in whose tract we find it, but to render it *prima facie* probable that it is derived originally from an authentic, and even from an official, source. There is indeed some confusion in the dates of the consulships, but not more than might easily arise from the repeated copying of a statement of this character. The circumstance that is wholly inexplicable is that no notice of such an important operation should be found in Pliny, who even where he is discussing the authority of Agrippa—sanctioned, as he expressly adds, by Augustus himself—in regard to the dimensions of Spain, affords no hint of its being based upon any such systematic measurement, a fact of which, having been himself procurator in Spain, he could hardly have been ignorant had it actually taken place.

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